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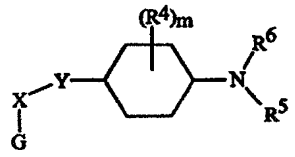
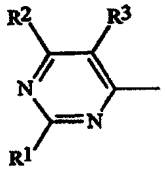
(54) Title: CYCLOHEXYLAMINE ARTHROPODICIDES AND FUNGICIDES



(I)



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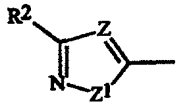

(G-2)

(57) Abstract

Compounds of Formula (I), and their agriculturally suitable salts, are disclosed which are useful as arthropodicides and fungicides wherein G is selected from the group consisting of (G–1) and (G–2); Y is a direct bond or C_1–C_4 alkylene optionally substituted with C_1–C_4 alkyl; X is O, NR^7 or $S(O)_p$; each Z is independently selected from N and CR^3; each Z^1 is independently selected from O, S and NR^8; and R^1–R^8, m and p are as defined in the disclosure. Also disclosed are compositions containing the compounds of Formula (I) and a method for controlling arthropods which involves contacting the arthropods or their environment with an effective amount of a compound of Formula (I). Also disclosed are compositions containing the compounds of Formula (I) and a method for controlling plant diseases caused by fungal plant pathogens which involves applying an effective amount of a compound of Formula (I).

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TITLE

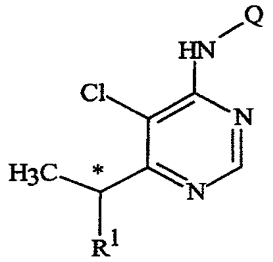
CYCLOHEXYLAMINE ARTHROPODICIDES AND FUNGICIDES

BACKGROUND OF THE INVENTION

This invention relates to certain cyclohexylamine arthropodicides and fungicides, agriculturally suitable salts and compositions, and methods of their use as arthropodicides and fungicides.

The control of arthropod pests is extremely important in achieving high crop efficiency. Arthropod damage to growing and stored agronomic crops can cause significant reduction in productivity and thereby result in increased costs to the consumer. The control of arthropod pests in forestry, greenhouse crops, ornamentals, nursery crops, stored food and fiber products, livestock, household, and public and animal health is also important. The control of plant diseases caused by fungal plant pathogens is also extremely important in achieving high crop efficiency. Plant disease damage to ornamental, vegetable, field, cereal, and fruit crops can cause significant reduction in productivity and thereby result in increased costs to the consumers. Many products are commercially available for these purposes, but the need continues for new compounds which are more effective, less costly, less toxic, environmentally safer or have different modes of action.

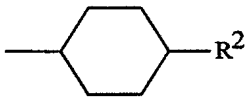
WO 96/06086 discloses compounds of Formula i and their composition and method of use as pest control agents



i

wherein

Q is



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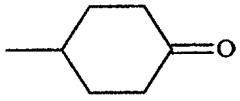

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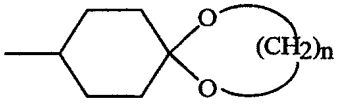


Qc;

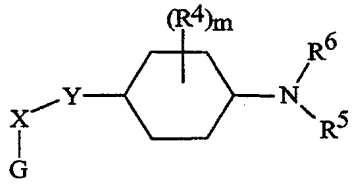
R^1 is halogen, C_2-C_5 acyloxy, OH, C_1-C_4 alkoxy or C_1-C_4 alkylthio; and

R^2 is C_1-C_8 alkyl, phenyl, pyrimidinylamino, C_1-C_6 alkoxy, $COOR^3$, amino or $NHCOR^4$.

The cyclohexylamines of the present invention are not disclosed in this publication.

SUMMARY OF THE INVENTION

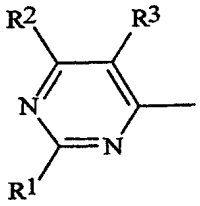
This invention is directed to compounds of Formula I including all geometric and stereoisomers, agriculturally suitable salts thereof, agricultural compositions containing them and their use as arthropodicides and fungicides,



I

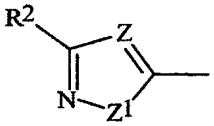
wherein:

G is selected from the group consisting of



G-1

and



G-2

;

Y is a direct bond or C_1-C_4 alkylene optionally substituted with C_1-C_4 alkyl;

X is O, NR^7 or $S(O)_p$;

each Z is independently selected from N and CR^3;

each Z^1 is independently selected from O, S and NR^8;

each R^1 is independently selected from the group consisting of H, halogen, C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_3-C_6 cycloalkyl, C_3-C_6 halocycloalkyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy and $R^9S(O)_p$;

each R^2 is independently selected from the group consisting of H, CF_3, C_1 alkyl optionally substituted with one or two R^{10} substituents, C_2-C_4 alkyl, $R^{10}CH_2CH_2$-, $(R^{10})_2CHCH_2$-, $R^{10}CH_2CH(R^{10})$-, $CH_3C(R^{10})_2$-, C_3-C_4 haloalkyl, C_2-C_4 alkenyl, C_2-C_4 haloalkenyl, C_2-C_4 alkynyl, C_2-C_4 haloalkynyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, halogen, hydroxy, C_2-C_4 alkylcarbonyl, C_2-C_4 haloalkylcarbonyl, C_3-C_6 cycloalkyl, C_3-C_6 halocycloalkyl, cyano, nitro, thiocyanato, C_2-C_4 alkoxycarbonyl, C_2-C_4 haloalkoxycarbonyl, C_1-C_4 alkylamino, C_2-C_4 dialkylamino and $R^{11}S(O)_p$;

each R^3 is independently selected from the group consisting of H, C_1-C_4 alkyl optionally substituted with one or two R^{10}, CF_3, C_2-C_4 alkenyl, C_2-C_4 haloalkenyl, C_2-C_4 alkynyl, C_2-C_4 haloalkynyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, halogen, hydroxy, C_2-C_4 alkylcarbonyl, C_2-C_4 haloalkylcarbonyl, C_3-C_6 cycloalkyl, C_3-C_6 halocycloalkyl, cyano, nitro, thiocyanato,

C_2-C_4 alkoxycarbonyl, C_2-C_4 haloalkoxycarbonyl, C_1-C_4 alkylamino, C_2-C_4 dialkylamino and $R^{11}S(O)_p$; or

R^2 and R^3 with the carbon atoms to which they are attached are taken together to form a:

(1) 5- or 6-membered unsaturated carbocyclic ring optionally substituted with R^{12}; or

(2) 5- or 6-membered unsaturated heterocyclic ring optionally substituted with R^{12} containing at least one of the atoms selected from O, N and S in the ring; or

R^2 and R^3 with the carbon atoms to which they are attached are taken together to form a:

(1) 5-, 6- or 7-membered saturated carbocyclic ring optionally substituted with a C_1-C_4 alkyl group; or

(2) 5-, 6- or 7-membered saturated heterocyclic ring optionally substituted with a C_1-C_4 alkyl group containing one or two O and/or $S(O)_p$ atoms in the ring;

each R^4 is independently selected from the group consisting of C_1-C_4 alkyl and C_1-C_4 alkoxy;

R^5 is H, C_1-C_6 alkyl optionally substituted with R^{13}, C_1-C_6 haloalkyl, C_3-C_6 cycloalkyl, C_3-C_6 halocycloalkyl, C_3-C_6 alkenyl, C_3-C_6 haloalkenyl, C_3-C_6 alkynyl, C_3-C_6 haloalkynyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy, C_3-C_6 alkynyloxy, C_3-C_6 haloalkenyloxy, C_4-C_6 cycloalkylalkoxy, C_2-C_6-cyanoalkoxy, phenylmethoxy, C_2-C_6 alkylcarbonyl, C_3-C_6 cycloalkylcarbonyl, phenylmethoxycarbonyl, formyl, C_2-C_6 haloalkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 haloalkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, hydroxy, $R^{14}S(O)_p$, $(R^{15})(R^{16})P(O)$, phenyl or benzoyl each optionally substituted with one, two or three R^{17} substituents, naphthalenyl or a 5- or 6-membered unsaturated heterocyclic ring optionally substituted with one or two R^{17} substituents;

R^6 is G, H, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_2-C_6 alkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, $R^{14}S(O)_p$, $(R^{15})(R^{16})P(O)$, phenyl optionally substituted with one, two or three R^{17} substituents, naphthalenyl or a 5- or 6-membered unsaturated heterocyclic ring optionally substituted with one or two R^{17} substituents; or

R^5 and R^6 with the nitrogen atom to which they are attached are taken together to form a:

(1) 5- or 6-membered unsaturated heterocyclic ring optionally containing an additional heteroatom selected from N, O and S in the ring and optionally

containing one or two ring members C(=O), the ring optionally substituted with one or two R^{18} substituents;

(2) 5-, 6- or 7-membered saturated heterocyclic ring optionally containing an additional heteroatom selected from N, O and $S(O)_p$ in the ring and optionally containing one or two ring members C(=O), the ring optionally substituted with one or two R^{18} substituents; or

(3) 9-, 10- or 11-membered fused bicyclic ring system optionally containing an additional heteroatom selected from N, O and $S(O)_p$ in the ring and optionally containing one or two ring members C(=O), the ring optionally substituted with one or two R^{18} substituents;

R^7 is H, C_1-C_4 alkyl, C_2-C_4 alkenyl, C_2-C_4 alkynyl, C_2-C_4 alkylcarbonyl, C_2-C_4 alkoxycarbonyl, C_2-C_4 alkylaminocarbonyl or C_3-C_8 dialkylaminocarbonyl;

each R^8 is independently selected from the group H, C_1-C_4 alkyl and C_3-C_6 cycloalkyl;

each R^9 is independently selected from the group C_1-C_4 alkyl and C_1-C_4 haloalkyl;

each R^{10} is independently selected from the group consisting of halogen, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, C_2-C_6 alkylcarbonyl, C_2-C_6 alkoxycarbonyl, hydroxy, cyano, nitro, thiocyanato and $R^9S(O)_p$;

each R^{11} is independently selected from the group C_1-C_4 alkyl and C_1-C_4 haloalkyl;

each R^{12} is independently selected from the group consisting of halogen, cyano, nitro, hydroxy, C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, C_1-C_4 alkylthio, C_1-C_4 alkylsulfinyl and C_1-C_4 alkylsulfonyl;

each R^{13} is independently selected from the group consisting of halogen, hydroxy, cyano, nitro, C_3-C_6 cycloalkyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, phenylmethoxy, C_2-C_6 alkylcarbonyl, C_2-C_6 haloalkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 haloalkoxycarbonyl, C_1-C_4 alkylthio, C_1-C_4 alkylsulfinyl, C_1-C_4 alkylsulfonyl, C_1-C_4 haloalkylsulfonyl, aminocarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, $R^9S(O)_p$ and phenyl optionally substituted with one, two or three R^{17} substituents;

each R^{14} is independently selected from the group consisting of C_1-C_4 alkyl, C_1-C_4 haloalkyl and phenyl optionally substituted with one, two or three R^{17} substituents;

each R^{15} and each R^{16} are independently selected from the group consisting of C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_1-C_4 alkoxy and C_1-C_4 haloalkoxy;

each R^{17} is independently selected from the group consisting of halogen, cyano, nitro, hydroxy, C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, C_1-C_4 alkylthio, C_1-C_4 alkylsulfinyl and C_1-C_4 alkylsulfonyl;

each R^{18} is independently selected from the group consisting of halogen, cyano, nitro, hydroxy, C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy,

$R^{14}S(O)_p$, C_2-C_6 alkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl and phenyl, phenylmethyl or pyridinyl each optionally substituted with one, two or three R^{17} substituents;

m is 0, 1 or 2; and

each p is independently selected from 0, 1 and 2.

In the above recitations, the term "alkyl", used either alone or in compound words such as "haloalkyl" includes straight-chain or branched alkyl, such as, methyl, ethyl, *n*-propyl, *i*-propyl, or the different butyl, pentyl or hexyl isomers. "Alkenyl" includes straight-chain or branched alkenes such as ethenyl, 1-propenyl, 2-propenyl, and the different butenyl, pentenyl or hexenyl isomers. "Alkenyl" also includes polyenes such as 1,2-propadienyl and 2,4-hexadienyl. "Alkynyl" includes straight-chain or branched alkynes such as ethynyl, 1-propynyl, 2-propynyl and the different butynyl, pentynyl or hexynyl isomers. "Alkynyl" can also include moieties comprised of multiple triple bonds such as 2,5-hexadiynyl. "Alkylene" denotes a straight-chain or branched alkanediyl. Examples of "alkylene" include CH_2, CH_2CH_2, $CH(CH_3)$, $CH_2CH_2CH_2$, $CH_2CH(CH_3)$ and the different butylene isomers. "Alkoxy" includes, for example, methoxy, ethoxy, *n*-propyloxy, isopropyloxy and the different butoxy, pentoxy or hexyloxy isomers. "Alkynyloxy" includes straight-chain or branched alkynyloxy moieties. Examples of "alkynyloxy" include $HC{\equiv}CCH_2O$, $CH_3C{\equiv}CCH_2O$ and $CH_3C{\equiv}CCH_2CH_2O$. "Cyanoalkoxy" denotes cyano substitution on alkoxy. Examples of "cyanoalkoxy" include $NCCH_2O$ and $NCCH_2CH_2O$.

"Alkylamino" denotes an amino group substituted with one alkyl group. Examples of "alkylamino" include CH_3NH, CH_3CH_2NH, $CH_3CH_2CH_2NH$, $(CH_3)_2CHNH$ and the different butylamino isomers. "Dialkylamino", and the like, are defined analogously to the above examples. Examples of "dialkylamino" include $(CH_3)_2N$ and $(CH_3)(CH_3CH_2)N$. "Dialkylaminocarbonyl" denotes dialkylamino substitution on carbonyl. Examples of "dialkylaminocarbonyl" include $(CH_3)_2NC(=O)$, $(CH_3CH_2)_2NC(=O)$ and $(CH_3)(CH_2CH_2)NC(=O)$. "Alkylaminocarbonyl", "aminocarbonyl" and the like, are defined analogously to the above examples. "Phenylmethoxycarbonyl" denotes phenylmethoxy substitution on carbonyl [i.e., $C_6H_5CH_2OC(=O)$]. "Phenylcarbonyl" is defined analogously to the above examples.

"Cycloalkyl" includes, for example, cyclopropyl, cyclobutyl, cyclopentyl and cyclohexyl. "Cycloalkylalkoxy" denotes cycloalkyl substitution on alkoxy. Examples of "cycloalkylalkoxy" include cyclopropyl-CH_2O and cyclohexyl-CH_2O. "Cycloalkylcarbonyl" denotes cycloalkyl substitution on carbonyl. Examples of "cycloalkylcarbonyl" include cyclopropyl-C(=O) and cyclohexyl-C(=O).

Examples of G-1 heterocycles include optionally substituted 4-pyrimidinyl; 5,6,7,8-tetrahydro-4-quinazolinyl; 4-quinazolinyl; thieno[3,2-d]pyrimidin-4-yl; and thieno[2,3-d]pyrimidin-4-yl. Examples of G-2 heterocycles include optionally substituted 5-

isothiazolyl; 1,2,4-thiadiazol-5-yl; 5-isoxazolyl; 1*H*-pyrazol-5-yl; 1,2,4-oxadiazol-5-yl; and 1*H*-1,2,4-triazol-5-yl.

The term "unsaturated carbocyclic ring" includes fully aromatic carbocycles (where aromatic indicates that the Hückel rule is satisfied). The term "saturated carbocyclic ring" denotes fully saturated carbocycles. The term "unsaturated heterocyclic ring" includes fully aromatic heterocycles (where aromatic indicates that the Hückel rule is satisfied). The term "saturated heterocyclic ring" denotes fully saturated heterocycles.

Examples of R^5 and/or R^6 as a "5- or 6-membered unsaturated heterocyclic ring" include optionally substituted 2-pyridinyl, 3-pyridinyl, 4-pyridinyl and 2-thienyl.

An example of "R^5 and R^6 with the nitrogen atom at which they are attached taken together to for a 5- or 6-membered unsaturated heterocyclic ring optionally containing an additional heteroatom selected from N, O and S in the ring and optionally containing one or two ring members C(=O)" includes optionally substituted 2,5-dihydro-2,5-dioxo-1*H*-pyrrol-1-yl.

Examples of "R^5 and R^6 with the nitrogen atom at which they are attached taken together to for a 5-, 6- or 7-membered saturated heterocyclic ring(s) optionally containing an additional heteroatom selected from N, O and $S(O)_p$ in the ring and optionally containing one or two ring members C(=O)" include optionally substituted 1-piperidinyl, 4-morpholinyl, 1-piperazinyl and 2,5-dioxo-1-pyrrolidinyl.

Examples of "R^5 and R^6 with the nitrogen atom at which they are attached taken together to for a 9-, 10- or 11-membered fused bicyclic ring system optionally containing an additional heteroatom selected from N, O and $S(O)_p$ in the ring and optionally containing one or two ring members C(=O)" include optionally substituted 1,3-dihydro-1,3-dioxo-2*H*-isoindol-2-yl and octahydro-1,3-dioxo-2*H*-isoindol-2-yl.

The term "halogen", either alone or in compound words such as "haloalkyl", includes fluorine, chlorine, bromine or iodine. Further, when used in compound words such as "haloalkyl", said alkyl may be partially or fully substituted with halogen atoms which may be the same or different. Examples of "haloalkyl" include F_3C, $ClCH_2$, CF_3CH_2 and CF_3CCl_2. The terms "haloalkenyl", "haloalkynyl", "haloalkoxy", "halocycloalkyl", "haloalkylcarbonyl" "haloalkoxycarbonyl" and the like, are defined analogously to the term "haloalkyl". Examples of "haloalkenyl" include $(Cl)_2C=CHCH_2$ and $CF_3CH=CHCH_2$. Examples of "haloalkynyl" include $HC\equiv CCHCl$, $CF_3C\equiv C$, $CCl_3C\equiv C$ and $FCH_2C\equiv CCH_2$. Examples of "haloalkoxy" include CF_3O, CCl_3CH_2O, $HCF_2CH_2CH_2O$ and CF_3CH_2O. Examples of "halocycloalkyl" include 2-chlorocyclopropyl and 2-fluorocyclohexyl. Examples of "haloalkylcarbonyl" include $CF_3C(=O)$, $CCl_3CH_2C(=O)$ and $HCF_2CH_2CH_2C(=O)$. Examples of "haloalkoxycarbonyl" include $CF_3OC(=O)$, $CCl_3CH_2OC(=O)$ and $HCF_2CH_2CH_2OC(=O)$. "Haloalkenyloxy" denotes haloalkenyl substitution on alkoxy. Examples of "haloalkenyloxy" include $CF_2=CF(CH_2)_2O$ and $CF_2=CFCH_2O$.

"Alkylthio" includes branched or straight-chain alkylthio moieties such as methylthio, ethylthio, and the different propylthio and butylthio isomers. "Alkylsulfinyl" includes both enantiomers of an alkylsulfinyl group. Examples of "alkylsulfinyl" include $CH_3S(O)$, $CH_3CH_2S(O)$, $CH_3CH_2CH_2S(O)$, $(CH_3)_2CHS(O)$ and the different butylsulfinyl isomers. Examples of "alkylsulfonyl" include $CH_3S(O)_2$, $CH_3CH_2S(O)_2$, $CH_3CH_2CH_2S(O)_2$, $(CH_3)_2CHS(O)_2$ and the different butylsulfonyl isomers.

The total number of carbon atoms in a substituent group is indicated by the "C_i-C_j" prefix where i and j are numbers from 1 to 8. For example, C_2 alkylcarbonyl designates $C(O)CH_3$ and C_4 alkylcarbonyl designates $C(O)CH_2CH_2CH_3$ and $C(O)CH(CH_3)_2$. Examples of "alkoxycarbonyl" include $CH_3OC(=O)$, $CH_3CH_2OC(=O)$, $CH_3CH_2CH_2OC(=O)$, $(CH_3)_2CHOC(=O)$ and the different butoxy-, pentoxycarbonyl, etc. isomers.

When a group contains a substituent which can be hydrogen, for example R^2 or R^7, then, when this substituent is taken as hydrogen, it is recognized that this is equivalent to said group being unsubstituted. When a group is optionally substituted with a substituent, for example with R^{17}, then, when the group is not substituted with that substituent, it is recognized that this is equivalent to said group having a hydrogen substituent.

Compounds of this invention can exist as one or more stereoisomers. The various stereoisomers include enantiomers, diastereomers, atropisomers and geometric isomers (e.g., *cis* and *trans* cyclohexane isomers). For 1,4-disubstituted cyclohexanes, the *cis* isomer is preferred. One skilled in the art will appreciate that one stereoisomer may be more active and/or may exhibit beneficial effects when enriched relative to the other stereoisomer(s) or when separated from the other stereoisomer(s). Additionally, the skilled artisan knows how to separate, enrich, and/or to selectively prepare said stereoisomers. Accordingly, the present invention comprises compounds selected from Formula I and agriculturally suitable salts thereof. The compounds of the invention may be present as a mixture of stereoisomers, individual stereoisomers, or as an optically active form.

The salts of the compounds of the invention include acid-addition salts with inorganic or organic acids such as hydrobromic, hydrochloric, nitric, phosphoric, sulfuric, acetic, butyric, fumaric, lactic, maleic, malonic, oxalic, propionic, salicylic, tartaric, 4-toluenesulfonic or valeric acids. The salts of the compounds of the invention also include quaternary salts formed with alkyl halides (e.g., iodomethane, iodoethane or 1-chlorododecane). The salts of the compounds of the invention also include those formed with organic bases (e.g., pyridine, ammonia or triethylamine) or inorganic bases (e.g., hydrides, hydroxides or carbonates of sodium, potassium, lithium, calcium, magnesium or barium) when the compound contains an acidic group such as a carboxylic acid or phenol.

Preferred compounds for reasons of better activity and/or ease of synthesis are:

Preferred 1. Compounds of Formula I above, and agriculturally suitable salts thereof, wherein

G is G-1;

Y is a direct bond;

X is NR^7;

R^1 is H or C_1-C_4 alkyl;

R^2 is C_1-C_4 alkyl, CF_3, C_3-C_6 cycloalkyl, $R^{10}CH_2CH_2$-, $(R^{10})_2CHCH_2$-, $R^{10}CH_2CH(R^{10})$-, $CH_3C(R^{10})_2$-, or C_1 alkyl optionally substituted with C_1-C_4 alkoxy;

R^3 is C_1-C_4 alkyl, CF_3, C_1 alkyl optionally substituted with C_1-C_4 alkoxy, C_2-C_4 alkenyl, C_2-C_4 alkynyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, halogen, hydroxy, cyano, nitro, thiocyanato or $R^{11}S(O)_p$; and

m is 0.

Preferred 2. Compounds of Preferred 1 above, and agriculturally suitable salts thereof, wherein

R^5 is H, C_1-C_6 alkyl optionally substituted with R^{13}, C_1-C_6 haloalkyl, C_3-C_6 cycloalkyl, C_3-C_6 alkenyl, C_3-C_6 haloalkenyl, C_3-C_6 alkynyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy, C_3-C_6 alkynyloxy, C_3-C_6 haloalkenyloxy, C_4-C_6 cycloalkylalkoxy, C_2-C_6-cyanoalkoxy, phenylmethoxy, C_2-C_6 alkylcarbonyl, C_3-C_6 cycloalkylcarbonyl, phenylmethoxycarbonyl, formyl, C_2-C_6 haloalkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 haloalkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, hydroxy, $R^{14}S(O)_p$, or $(R^{15})(R^{16})P(O)$;

R^6 is G, H, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_2-C_6 alkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, $R^{14}S(O)_p$, $(R^{15})(R^{16})P(O)$, phenyl optionally substituted with one, two or three R^{17} substituents, naphthalenyl or a 5- or 6-membered unsaturated heterocyclic ring optionally substituted with one or two R^{17} substituents; or

R^5 and R^6 with the nitrogen atom to which they are attached are taken together to form a 1-piperazinyl; 2,5-dioxo-1-pyrrolidinyl; 2,5-dihydro-2,5-dioxo-1*H*-pyrrol-1-yl; or 1,3-dihydro-1,3-dioxo-2*H*-isoindol-2-yl; ring each optionally substituted with R^{18}.

Preferred 3. Compounds of Preferred 2 above, and agriculturally suitable salts thereof, wherein

R^5 is H, C_1-C_6 alkyl optionally substituted with R^{13}, C_1-C_6 haloalkyl, C_3-C_6 cycloalkyl, C_3-C_6 alkenyl, C_3-C_6 haloalkenyl, C_3-C_6 alkynyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy, C_3-C_6 alkynyloxy, C_3-C_6 haloalkenyloxy,

C_4-C_6 cycloalkylalkoxy, C_2-C_6-cyanoalkoxy, phenylmethoxy, C_2-C_6 alkylcarbonyl, C_3-C_6 cycloalkylcarbonyl, phenylmethoxycarbonyl, formyl, C_2-C_6 haloalkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 haloalkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, hydroxy, $R^{14}S(O)_p$, or $(R^{15})(R^{16})P(O)$;

R^6 is G, H, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_2-C_6 alkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, phenyl optionally substituted with one, two or three R^{17} substituents, or pyridinyl optionally substituted with one or two R^{17} substituents; or

R^5 and R^6 with the nitrogen atom to which they are attached are taken together to form a 1-piperazinyl; 2,5-dioxo-1-pyrrolidinyl; 2,5-dihydro-2,5-dioxo-1*H*-pyrrol-1-yl; or 1,3-dihydro-1,3-dioxo-2*H*-isoindol-2-yl; ring each optionally substituted with R^{18}.

Preferred 4. Compounds of Preferred 2 above, and agriculturally suitable salts thereof, wherein

R^5 is H, C_1-C_6 alkyl optionally substituted with R^{13}, C_1-C_6 haloalkyl, C_3-C_6 cycloalkyl, C_3-C_6 alkenyl, C_3-C_6 haloalkenyl, C_3-C_6 alkynyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy, C_3-C_6 alkynyloxy, C_3-C_6 haloalkenyloxy, C_4-C_6 cycloalkylalkoxy, C_2-C_6-cyanoalkoxy, phenylmethoxy, C_2-C_6 alkylcarbonyl, C_3-C_6 cycloalkylcarbonyl, phenylmethoxycarbonyl, formyl, C_2-C_6 haloalkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 haloalkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, hydroxy, $R^{14}S(O)_p$, or $(R^{15})(R^{16})P(O)$;

R^6 is H, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_2-C_6 alkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, phenyl optionally substituted with one, two or three R^{17} substituents, or pyridinyl optionally substituted with one or two R^{17} substituents; or

R^5 and R^6 with the nitrogen atom to which they are attached are taken together to form a 1-piperazinyl; 2,5-dioxo-1-pyrrolidinyl; 2,5-dihydro-2,5-dioxo-1*H*-pyrrol-1-yl; or 1,3-dihydro-1,3-dioxo-2*H*-isoindol-2-yl; ring each optionally substituted with R^{18}.

Preferred 5. Compounds of Formula I above, and agriculturally suitable salts thereof, wherein

G is G-2;

Y is a direct bond;

X is NR^7;

Z^1 is S;

R^2 is C_1-C_4 alkyl, C_1-C_4 haloalkoxy, C_3-C_6 cycloalkyl or C_1 alkyl optionally substituted with C_1-C_4 alkoxy;

R^3 is C_1-C_4 alkyl, CF_3, C_1 alkyl optionally substituted with C_1-C_4 alkoxy, C_2-C_4 alkenyl, C_2-C_4 alkynyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, halogen, hydroxy, cyano, nitro, thiocyanato or $R^{11}S(O)_p$; and

m is 0.

This invention also relates to arthropodicidal compositions comprising arthropodicidally effective amounts of the compounds of the invention and at least one of a surfactant, a solid diluent or a liquid diluent. The preferred compositions of the present invention are those which comprise the above preferred compounds.

This invention also relates to a method for controlling arthropods comprising contacting the arthropods or their environment with an arthropodicidally effective amount of the compounds of the invention (e.g., as a composition described herein). The preferred methods of use are those involving the above preferred compounds.

This invention also relates to fungicidal compositions comprising fungicidally effective amounts of the compounds of the invention and at least one of a surfactant, a solid diluent or a liquid diluent. The preferred compositions of the present invention are those which comprise the above preferred compounds.

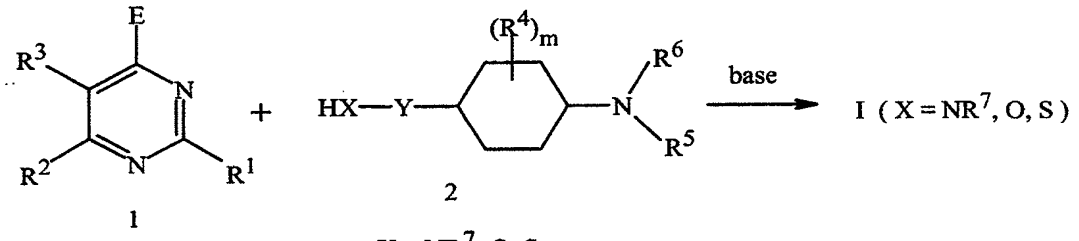
This invention also relates to a method for controlling plant diseases caused by fungal plant pathogens comprising applying to the plant or portion thereof, or to the plant seed or seedling, a fungicidally effective amount of the compounds of the invention (e.g., as a composition described herein). The preferred methods of use are those involving the above preferred compounds.

DETAILS OF THE INVENTION

The compounds of Formula I can be prepared by one or more of the following methods and variations as described in Schemes 1-17. The definitions of G, G-1, G-2, Y, X, Z, Z^1, m, p and R^1-R^{22} in the compounds of Formulae I and 1-23 below are as defined above (including the Summary of the Invention) or below (including the Schemes). Compounds of Formulae Ia-Ib are various subsets of the compounds of Formula I, and all substituents for Formulae Ia-Ib are as defined above for Formula I.

Compounds of Formula I can be prepared by reaction of a heterocycle of Formula 1 with a compound of Formula 2 in the presence of an acid acceptor or a base. Typical bases can be triethylamine, pyridine, sodium hydride or potassium carbonate. The reaction can be carried out in the presence of a solvent such as toluene, tetrahydrofuran, acetonitrile, *N,N*-dimethylformamide or isopropanol. The reaction can be conducted in the temperature range of 0 °C to the reflux temperature of the solvent. Scheme 1 depicts this transformation.

Scheme 1



1

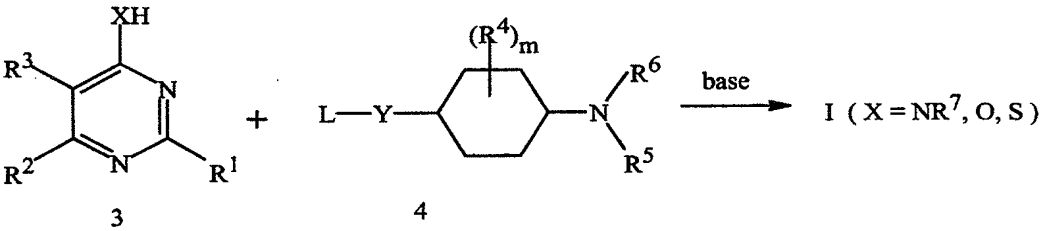
2

$X = NR^7$, O, S

E = F, Cl, Br, I, SO_2Me, SO_2Ar,
OSO_2Me, OSO_2CF_3, OSO_2Ar (e.g., $OSO_2(4\text{-}CH_3\text{-}Ph)$)

Alternatively, compounds of Formula I can be prepared by reaction of a heterocycle of Formula 3 with a compound of Formula 4 in the presence of a base. Typical bases can include sodium hydride, potassium *tert*-butoxide or potassium carbonate. Typical solvents for the reaction include ether, tetrahydrofuran, acetonitrile or *N,N*-dimethylformamide. The reaction can be conducted in the temperature range of 0 °C to the reflux temperature of the particular solvent. Scheme 2 depicts this transformation.

Scheme 2



3

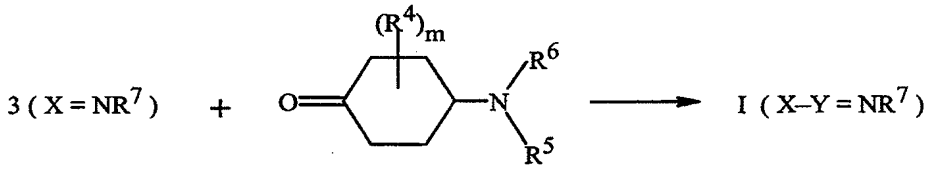
4

$X = NR^7$, O, S

L = F, Cl, Br, I, OSO_2Me,
OSO_2CF_3, OSO_2Ar

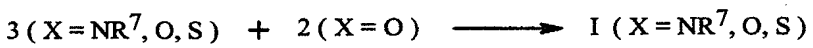
Alternatively, compounds of Formula I can be prepared by reaction of a heterocycle of Formula 3 ($X = NR^7$) with a ketone of Formula 5 in the presence of a reducing agent. One skilled in the art will recognize said transformations as reductive aminations. A typical example of a reductive amination is described by Bagley et al. (*J. Med. Chem.* **1989**, *32*, 663-671). The desired reductions can be performed with hydride agents such as sodium borohydride, sodium cyanoborohydride or sodium triacetoxyborohydride, or by catalytic hydrogenation (Hudlicky, M., *Reductions in Organic Chemistry*; Academic: New York, 1984). The reaction is typically conducted in methanol, ethanol, ether, tetrahydrofuran, dichloromethane, 1,2-dichloroethane or toluene in the presence of an additive such as hydrochloric or acetic acid. Scheme 3 depicts this transformation.

Scheme 3



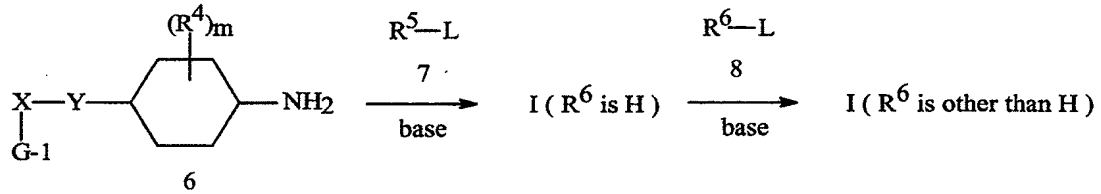
Alternatively, compounds of Formula I can be prepared by reaction of a heterocycle of Formula 3 with an alcohol of Formula 2 (X = O) in the presence of a phosphine and an azodicarboxylate. One skilled in the art will recognize said reactions as Mitsunobu reactions (Hughes, D. L. *Org. Prep. Proc. Int.* **1996**, *28*, 127-164). Typical phosphines can include triphenylphosphine, tributylphosphine or trimethylphosphite. Typical azodicarboxylates can include diethyl azodicarboxylate (DEAD) or diisopropyl azodicarboxylate (DIAD). The reaction is typically conducted in ether, tetrahydrofuran, benzene or toluene. Scheme 4 depicts this transformation.

Scheme 4



Alternatively, compounds of Formula I can be prepared by reaction of an amine of Formula 6 with a compound of Formula 7 in the presence of a base. Typical bases can be triethylamine, pyridine, potassium carbonate or sodium bicarbonate. This reaction can be repeated with compounds of Formula 8 in the presence of another base to provide compounds of Formula I (R^6 is other than H). Typical bases for the second reaction can include triethylamine, potassium carbonate, sodium hydride or potassium *tert*-butoxide. Typical solvents for these reactions can be dichloromethane, ether, tetrahydrofuran, toluene, acetonitrile or *N,N*-dimethylformamide. The reaction can be conducted in the temperature range of 0 °C to the reflux temperature of the solvent. When R^6 is a phenyl group, the reaction can be carried out in the presence of either a palladium or a copper catalyst. Such reactions are well known to one skilled in the art. For example, conversion of aryl bromides into arylamines in the presence of a palladium catalyst is described by Buchwald et al. (*Angew. Chem. Int. Ed. Engl.* **1995**, *34*, 1348-1350). Compounds of Formulae 7 and 8 can be obtained from commercial sources or prepared by conventional methods well known to one skilled in the art. Scheme 5 depicts this transformation.

Scheme 5

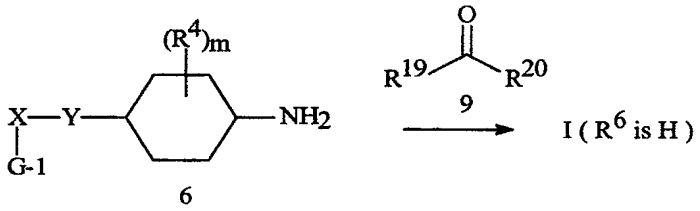


6

L = F, Cl, Br, I, OSO_2Me, OSO_2CF_3, OSO_2Ar

Alternatively, compounds of Formula I can be prepared by reductive amination of an amine of Formula 6 with a carbonyl compound of Formula 9. The reaction can be carried out in a manner analogous to Scheme 3 reactions to provide compounds of Formula I (R^6 is H). The carbonyl compounds of Formula 9 can be obtained from commercial sources or prepared by conventional methods well known to one skilled in the art. Scheme 6 depicts this transformation.

Scheme 6



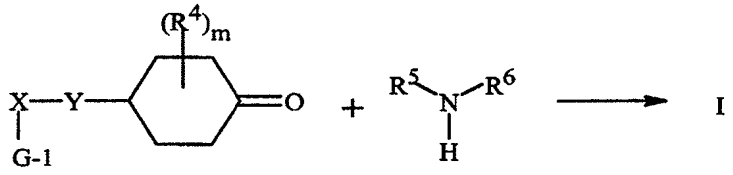
6

R^{19} = H, Me, Et

R^{20} = H, Me, Et, Ph

Alternatively, compounds of Formula I can be prepared by reductive amination of a ketone of Formula 10 with an amine of Formula 11. The reaction can be carried out in a manner analogous to Scheme 3 reactions. The reaction also can be carried out in a stepwise manner. Such alternative procedures are well known to one skilled in the art. The amines of Formula 11 can be obtained from commercial sources or prepared by conventional methods well known to one skilled in the art. Scheme 7 depicts this transformation.

Scheme 7



10

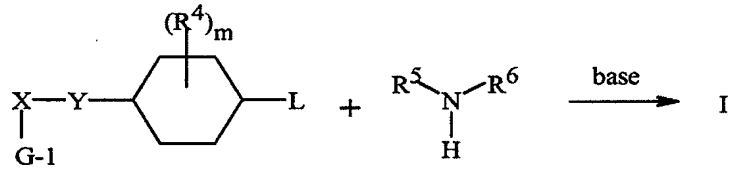
11

amine

Alternatively, compounds of Formula I can be prepared by displacement of a leaving group in a compound of Formula 12 by an amine of Formula 11 in the presence of a base.

The reaction can be carried out in a manner analogous to Scheme 5 reactions. Scheme 8 depicts this transformation.

Scheme 8



12

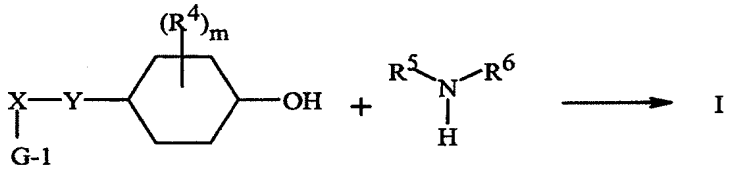
L = F, Cl, Br, I, OSO_2Me, OSO_2CF_3, OSO_2Ar

11

amine

Alternatively, compounds of Formula I can be prepared by reaction of an alcohol of Formula 13 with an activated amide of Formula 14 under Mitsunobu conditions. Mitsunobu reactions were already described in detail in Scheme 4. The amides of Formula 14 can be obtained from commercial sources or prepared by conventional methods well known to one skilled in the art. Scheme 9 depicts this transformation.

Scheme 9



13

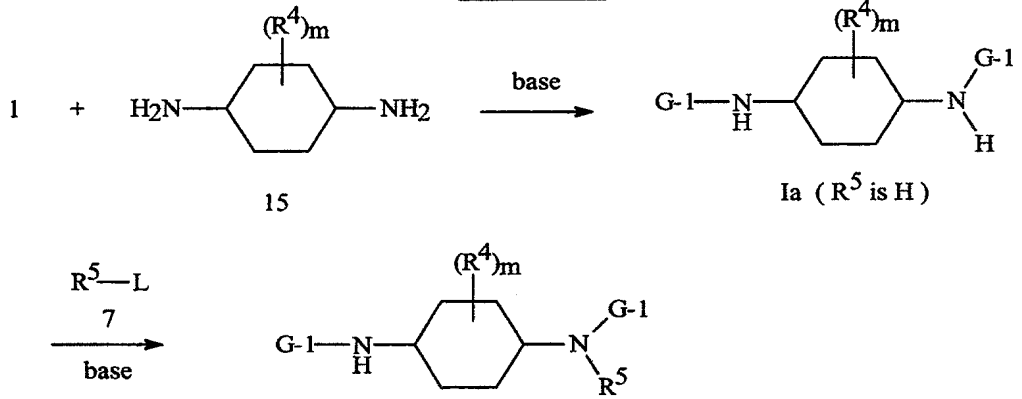
14

amide

Alternatively, compounds of Formula Ia can be prepared by reaction of a heterocycle of Formula 1 with a diaminocyclohexane of Formula 15 in the presence of an acid acceptor or a base. The reaction is generally carried out with two or more equivalents of a heterocycle of Formula 1 in the presence of an excess amount of a base. Typical bases can be triethylamine, *N,N*-diisopropylethylamine, pyridine or potassium carbonate. The reaction can be carried out in the presence of a solvent such as toluene, tetrahydrofuran, acetonitrile, *N,N*-dimethylformamide or isopropanol. Typical reaction temperature can range from 0 °C to the reflux temperature of the particular solvent. The product can be derivatized further by reaction with compounds of Formula 7 in the presence of a base to provide compounds of Formula Ib (R^5 is other than H). Typical bases for this can include sodium hydride, *N,N*-diisopropylethylamine, potassium *tert*-butoxide or potassium carbonate. Typical solvents can be ether, tetrahydrofuran, toluene, acetonitrile or *N,N*-dimethylformamide. The reaction can be conducted in the temperature range of 0 °C to the reflux temperature of the solvent. The diaminocyclohexanes of Formula 15 can be obtained from commercial sources

or prepared by conventional methods well known to one skilled in the art. An example of such preparation of diaminocyclohexanes is described by Johnston et al. (*J. Med. Chem.* **1977**, *20*, 279-290). Scheme 10 depicts this transformation.

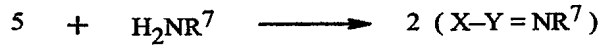
Scheme 10



Heterocycles of Formulae 1 and 3 can be prepared by a variety of literature methods or can be obtained from commercial sources. For example, pyrimidines of Formulae 1 and 3 can be prepared by procedures taught in U.S. Patent 4,977,264 and Foster et al. (*Org. Synth.* **1955**, *35*, 80-82), respectively. One skilled in the art will recognize that heterocycles of Formulae 1 and 3 can be interconverted by well-known chemistry. For example, heterocycles of Formula 1 (E = Cl, Br) can be converted into heterocycles of Formula 3 (X = O) by hydrolysis. Conversely, heterocycles of Formula 3 (X = NH) can be converted into heterocycles of Formula 1 (E = Cl, Br) by a Sandmeyer reaction (March, J. *Advanced Organic Chemistry*; 3rd ed.; John Wiley & Sons: New York, 1985; pp 647-648).

Compounds of Formula 2 can be prepared by reductive amination of a ketone of Formula 5 with an amine of Formula 16. The reaction can be carried out in a manner analogous to Scheme 3 reactions. Scheme 11 depicts this transformation.

Scheme 11

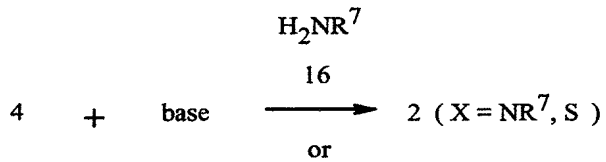


16

Alternatively, compounds of Formula 2 (X = NR^7) can be prepared by reaction of a compound of Formula 4 with an amine of Formula 16 in the presence of a base. The reaction can be carried out in a manner analogous to Scheme 5 reactions. Compounds of Formula 2 (X = S) can be prepared by reaction of a compound of Formula 4 with a sulfur nucleophile of Formula 17 in the presence of a base. A typical sulfur nucleophile of Formula 17 can be thiourea, sodium hydrosulfide, sodium sulfide, potassium thioacetate, potassium thiocyanate, sodium thiophosphate or potassium *O*-ethyl xanthate. The utility of these reagents is well

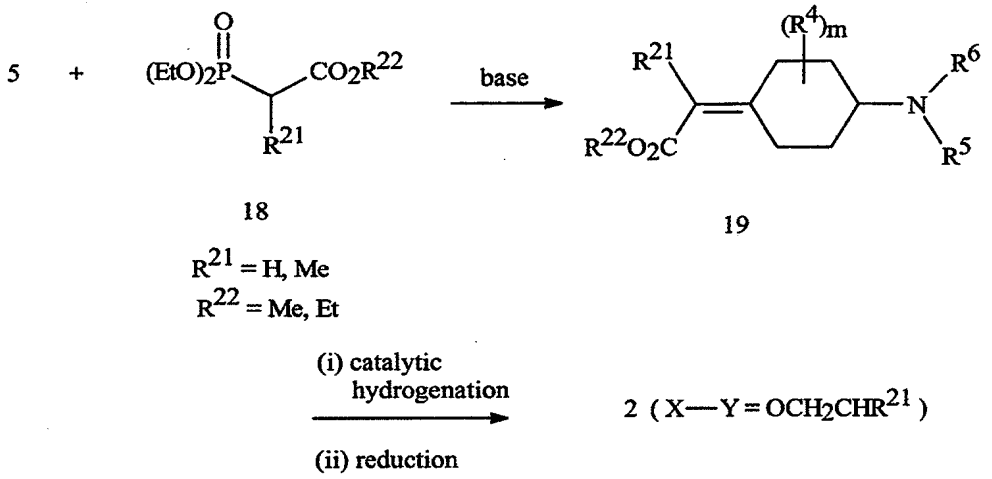
known in literature. For example, the use of sodium thiophosphate is described by Bieniarz et al. (*Tetrahedron Lett.* **1993**, *34*, 939-942). The reaction of a compound of Formula 4 with sulfur nucleophile of Formula 17 may subsequently require a hydrolysis step in preparing compounds of Formula 2 (X = S). Scheme 12 depicts this transformation.

Scheme 12



Alternatively, compounds of Formula 2 can be prepared from ketones of Formula 5 by a sequence of homologation reactions that are well known to one skilled in the art. For example, a ketone of Formula 5 is first converted into unsaturated ester of Formula 19 with a phosphonate of Formula 18 under Horner-Emmons olefination conditions (March, J. *Advanced Organic Chemistry*; 3rd Ed.; John Wiley & Sons; New York, (1985); p 848). Compounds of Formula 19 then can be converted into compounds of Formula 2 (X-Y = OCH_2CHR^{21}) via catalytic hydrogenation followed by reduction. Phosphonates of Formula 18 can be obtained from commercial sources. Scheme 13 depicts this transformation.

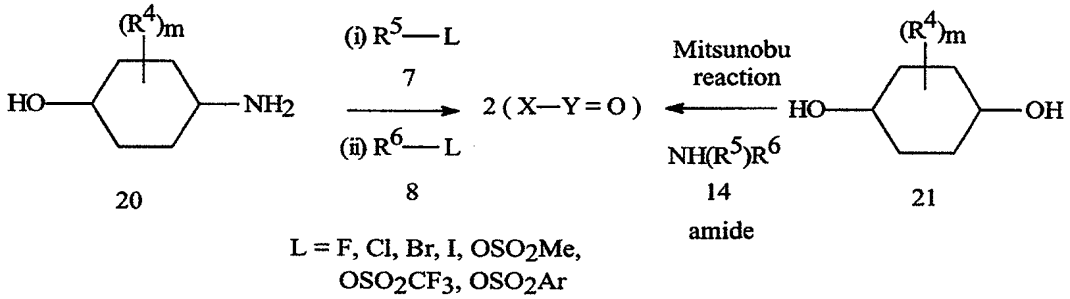
Scheme 13



Alternatively, compounds of Formula 2 can be prepared from aminocyclohexanols of Formula 20 by a sequence of reactions with compounds of Formulae 7 and 8 in the presence of a base. The reaction can be carried out in a manner analogous to Scheme 5 reactions. Compounds of Formula 2 can be also prepared from cyclohexanediols of Formula 21 by Mitsunobu reaction with activated amide of Formula 14 in the presence of a phosphine and

an azodicarboxylate. The reaction can be carried out in a manner analogous to Scheme 9 reactions. Compounds of Formulae 20 and 21 can be obtained from commercial sources or prepared by conventional methods well known to one skilled in the art. Scheme 14 depicts this transformation.

Scheme 14



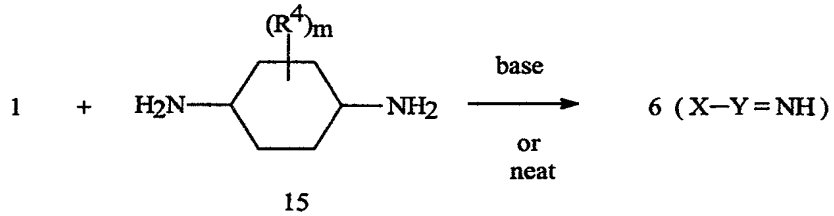
Compounds of Formula 4 can be prepared from alcohols of Formula 2 (X = O) by a variety of literature methods. Such conversions of alcohols are well known to one skilled in the art (Carey, F. A.; Sundberg, R. J. *Advanced Organic Chemistry*; 2nd ed.; Plenum: New York, 1983; Part B, pp 95-101).

Compounds of Formula 5 can be prepared by oxidation of alcohols of Formula 2 (X-Y = O). One skilled in the art will recognize that ketones of Formula 5 and alcohols of Formula 2 (X-Y = O) can be interconverted by a variety of reduction and oxidation methods (March, J. *Advanced Organic Chemistry*; 3rd ed.; John Wiley & Sons: New York, 1985; pp 809-814, 1057-1060).

Compounds of Formula 6 can be prepared by reductive amination of compounds of Formula 10 with ammonia in the presence of a reducing agent. The reaction can be carried out in a manner analogous to Scheme 7 reactions.

Alternatively, compounds of Formula 6 can be prepared by reaction of one or less equivalent of a heterocycle of Formula 1 with diaminocyclohexane of Formula 15 with or without a base. The reaction can be carried out in a manner analogous to Scheme 10 reactions. Scheme 15 depicts this transformation.

Scheme 15

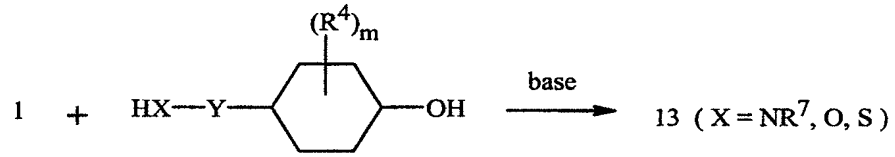


Compounds of Formula 10 can be prepared by oxidation of alcohols of Formula 13. One skilled in the art will recognize that ketones of Formula 10 and alcohols of Formula 13 can be interconverted by a variety of reduction and oxidation methods (March, J. *Advanced Organic Chemistry*; 3rd ed.; John Wiley & Sons: New York, 1985; pp 809-814, 1057-1060).

Compounds of Formula 12 can be prepared from alcohols of Formula 13 by a variety of literature methods. Such conversions of alcohols are well known to one skilled in the art (Carey, F. A.; Sundberg, R. J. *Advanced Organic Chemistry*; 2nd ed.; Plenum: New York, 1983; Part B, pp 95-101).

Compounds of Formula 13 can be prepared by reaction of a heterocycle of Formula 1 with a compound of Formula 22 in the presence of a base. The reaction can be carried out in a manner analogous to Scheme 1 reactions. Scheme 16 depicts this transformation.

Scheme 16

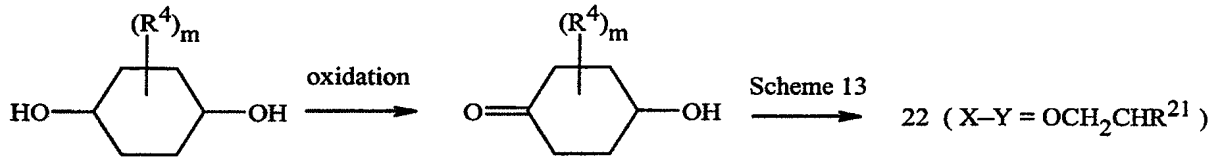


22

$X = NR^7, O, S$

Compounds of Formula 22 can be obtained from commercial sources or prepared by conventional methods well known to one skilled in the art. For example, compounds of Formula 22 ($X\text{-}Y = OCH_2CHR^{21}$) can be prepared from cyclohexanediols of Formula 21 by oxidation followed by a sequence of reactions described in detail in Scheme 13. Scheme 17 depicts this transformation.

Scheme 17



21 23

Compounds of Formula I (G = G-2) can be prepared in a manner exactly analogous to reactions described in Schemes 1-17 for Formula I (G = G-1) compounds.

It is recognized that some reagents and reaction conditions described above for preparing compounds of Formula I may not be compatible with certain functionalities present in the intermediates. In these instances, the incorporation of protection and deprotection sequences or functional group interconversions into the synthesis will aid in obtaining the desired products. The use and choice of the protecting groups will be apparent to one skilled in chemical synthesis (see, for example, Greene, T. W. *Protective Groups in Organic Synthesis*; John Wiley & Sons: New York, 1981). One skilled in the art will recognize that, in some cases, after the introduction of a given reagent as it is depicted in any individual scheme, it can be necessary to perform additional routine synthetic steps not described in

detail to complete the synthesis of compounds of Formula I. One skilled in the art will also recognize that it can be necessary to perform a combination of the steps illustrated in the above schemes in an order other than that implied by the particular sequence presented to prepare the compounds of Formula I.

One skilled in the art will also recognize that compounds of Formula I and the intermediates described herein can be subjected to various electrophilic, nucleophilic, radical, organometallic, oxidation, and reduction reactions to add substituents or modify existing substituents.

Without further elaboration, it is believed that one skilled in the art using the preceding description can utilize the present invention to its fullest extent. The following Examples are, therefore, to be construed as merely illustrative, and not limiting of the disclosure in any way whatsoever. The title compound in each example is indicated by the abbreviation "Ex." followed by a number showing in which example the compound is prepared. Percentages are by weight except for chromatographic solvent mixtures or where otherwise indicated. Parts and percentages for chromatographic solvent mixtures are by volume unless otherwise indicated. ^{1}H NMR spectra are reported in ppm downfield from tetramethylsilane; s = singlet, d = doublet, t = triplet, q = quartet, m = multiplet, dd = doublet of doublets, ddd = doublet of doublet of doublets, tt = triplet of triplets, br s = broad singlet, br d = broad doublet.

The following examples illustrate the invention:

EXAMPLE 1

cis-N,N'-Bis(5-chloro-6-ethyl-4-pyrimidinyl)-1,4-cyclohexanediamine

To a magnetically-stirred solution of 0.50 g (4.38 mmol) of 1,4-cyclohexanediamine (*ca. cis/trans* = 80/20) in 30 mL of acetonitrile were sequentially added 1.8 mL (13.14 mmol) of triethylamine and a solution of 1.63 g (9.20 mmol) of 4,5-dichloro-6-ethylpyrimidine in 10 mL of acetonitrile dropwise under nitrogen. The resultant clear solution was heated at reflux for 72 h. The mixture was cooled and diluted with ethyl acetate and water. The layers were separated and the aqueous layer was extracted with ethyl acetate (2x). The combined organic layers were washed with brine, dried over anhydrous magnesium sulfate, filtered, and concentrated at reduced pressure. The residue was purified by silica gel flash column chromatography eluting with 10%, 40%, then 60% ethyl acetate/hexane to afford 1.10 g (64%) of the title compound (Ex. 1) as a white solid, melting at 119-121 °C. ^{1}H NMR ($CDCl_3$): δ 8.43 (s, 2H), 5.43 (d, 2H), 4.22 (m, 2H), 2.80 (q, 4H), 1.96 (m, 4H), 1.76 (m, 4H), 1.27 (t, 6H).

EXAMPLE 2

(a) *cis*-*N'*-(5-Chloro-6-ethyl-4-pyrimidinyl)-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N*-methyl-1,4-cyclohexanediamine, (b) *cis*-*N,N'*-bis(5-chloro-6-ethyl-4-pyrimidinyl)-*N,N'*-dimethyl-1,4-cyclohexanediamine and (c) *cis*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N'*-[5-chloro-6-(1-methylethyl)-4-pyrimidinyl]-*N,N'*-dimethyl-1,4-cyclohexanediamine

To a magnetically-stirred suspension of 0.28 g (7.06 mmol) of sodium hydride (60 wt% dispersion in mineral oil) in 20 mL of *N,N*-dimethylformamide was added a solution of 0.93 g (2.35 mmol) of *cis*-*N,N'*-bis(5-chloro-6-ethyl-4-pyrimidinyl)-1,4-cyclohexanediamine in 10 mL of *N,N*-dimethylformamide dropwise under nitrogen. The resultant mixture was heated and stirred at 85-90 °C for 40 min and a solution of 0.44 mL (7.06 mmol) of iodomethane in 10 mL of *N,N*-dimethylformamide was added dropwise. The resultant clear yellow solution was stirred at the same temperature overnight. The mixture was cooled and poured onto a diethyl ether-water solution. The layers were separated and the aqueous layer was extracted with diethyl ether (2x). The combined organic layers were washed with water and brine, dried over anhydrous magnesium sulfate, filtered, and concentrated at reduced pressure. The residue was purified by silica gel flash column chromatography eluting with 20%, 30%, 40%, 50%, then 100% ethyl acetate/hexane to afford 0.07 g (6%) of *cis*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N'*-[5-chloro-6-(1-methylethyl)-4-pyrimidinyl]-*N,N'*-dimethyl-1,4-cyclohexanediamine (Ex. 2c) as a white solid, melting at 95-97 °C, ^{1}H NMR ($CDCl_3$): δ 8.57 (s, 1H), 8.52 (s, 1H), 4.07 (m, 2H), 3.54 (m, 1H), 2.96 (s, 3H), 2.94 (s, 3H), 2.88 (q, 2H), 2.06 (m, 4H), 1.61 (m, 4H), 1.30 (t, 3H), 1.26 (d, 6H), 0.21 g (21%) of *cis*-*N,N'*-bis(5-chloro-6-ethyl-4-pyrimidinyl)-*N,N'*-dimethyl-1,4-cyclohexanediamine (Ex. 2b) as a white solid, melting at 86-87 °C, ^{1}H NMR ($CDCl_3$): δ 8.53 (s, 2H), 4.07 (m, 2H), 2.96 (s, 6H), 2.89 (q, 4H), 2.05 (m, 4H), 1.61 (m, 4H), 1.30 (t, 6H), and 0.16 g (16%) of *cis*-*N'*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N*-methyl-1,4-cyclohexanediamine (Ex. 2a) as a white solid, melting at 68-70 °C, ^{1}H NMR ($CDCl_3$): δ 8.45 (s, 1H), 8.43 (s, 1H), 5.58 (br d, 1H), 4.33 (m, 1H), 4.18 (m, 1H), 3.03 (s, 3H), 2.86 (q, 2H), 2.81 (q, 2H), 2.10 (m, 2H), 1.81 (m, 6H), 1.29 (t, 3H), 1.28 (t, 3H).

EXAMPLE 3

cis-*N,N'*-Bis(5-chloro-6-ethyl-4-pyrimidinyl)-1,4-cyclohexanediamine dihydrochloride

To a magnetically-stirred solution of 0.72 g (1.82 mmol) of *cis*-*N,N'*-bis(5-chloro-6-ethyl-4-pyrimidinyl)-1,4-cyclohexanediamine in 20 mL of dichloromethane was added 5 mL of 1 *M* HCl solution in methanol. The resultant mixture was stirred at room temperature overnight and concentrated at reduced pressure. The solid residue was washed with dichloromethane and diethyl ether, and dried to afford 0.51 g (60%) of the title compound (Ex. 3) as a white solid, melting at 239-242 °C, ^{1}H NMR (DMSO-d_6): δ 8.67 (s, 2H), 7.73 (br s, 2H), 4.27 (m, 2H), 2.82 (q, 4H), 1.95 (m, 4H), 1.71 (m, 4H), 1.22 (t, 6H).

EXAMPLE 4

cis-N-(5-Chloro-6-ethyl-4-pyrimidinyl)-*N'*-(4-quinazolinyl)-1,4-cyclohexanediamine

To a magnetically-stirred solution of 0.50 g (4.38 mmol) of 1,4-cyclohexanediamine (*ca.* cis/trans = 80/20) in 30 mL of acetonitrile were sequentially added 1.8 mL (13.14 mmol) of triethylamine and a solution of 0.78 g (4.38 mmol) of 4,5-dichloro-6-ethylpyrimidine in 10 mL of acetonitrile dropwise under nitrogen. The clear solution was heated at reflux for 1 h. The resultant mixture was cooled to 40 °C and a slurry of 0.72 g (4.38 mmol) of 4-chloroquinazoline in 10 mL of acetonitrile was added. The resultant mixture was heated at reflux overnight. The mixture was cooled and diluted with ethyl acetate and water. The layers were separated and the aqueous layer was saturated with sodium chloride and extracted with ethyl acetate (2x). The combined organic layers were washed with brine, dried over anhydrous magnesium sulfate, filtered, and concentrated at reduced pressure. The solid residue was purified by silica gel flash column chromatography eluting with ethyl acetate to afford 0.24 g (14%) of the title compound (Ex. 4) as a white solid, melting at 188-191 °C. ^{1}H NMR ($CDCl_3$): δ 8.68 (s, 1H), 8.44 (s, 1H), 7.86 (d, 1H), 7.75 (m, 2H), 7.49(ddd, 1H), 5.69 (br d, 1H), 5.46 (br d, 1H), 4.47 (m, 1H), 4.28 (m, 1H), 2.80 (q, 2H), 2.05 (m, 4H), 1.84 (m, 4H), 1.28 (t, 3H).

EXAMPLE 5

Step A: *trans*-4-[(5-chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexanol

To a magnetically-stirred solution of 1.00 g (8.68 mmol) of *trans*-4-aminocyclohexanol in 40 mL of acetonitrile were sequentially added 1.8 mL (13.02 mmol) of triethylamine and a solution of 1.69 g (9.55 mmol) of 4,5-dichloro-6-ethylpyrimidine in 10 mL of acetonitrile dropwise under nitrogen. The pale yellow solution was heated at reflux overnight. The resultant clear orange mixture was cooled and diluted with ethyl acetate and water. The layers were separated and the aqueous layer was saturated with NaCl and extracted with ethyl acetate (2x). The combined organic layers were washed with brine, dried over anhydrous magnesium sulfate, filtered, and concentrated at reduced pressure. The residue was purified by silica gel flash column chromatography eluting with 50%, then 100% ethyl acetate/hexane to afford 1.87 g (84%) of *trans*-4-[(5-chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexanol as a white solid, melting at 138-139 °C, ^{1}H NMR ($CDCl_3$): δ 8.41 (s, 1H), 5.16 (br d, 1H), 3.99 (m, 1H), 3.69 (m, 1H), 2.78 (q, 2H), 2.15 (m, 2H), 2.04 (m, 2H), 1.50 (m, 2H), 1.48 (d, 1H), 1.32 (m, 2H), 1.26 (t, 3H).

Step B: 4-[(5-chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexanone

To a magnetically-stirred solution of 2.00 g (7.82 mmol) of *trans*-4-[(5-chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexanol in 60 mL of dichloromethane was added 2.02 g (9.38 mmol) of pyridinium chlorochromate in one portion. The resultant black mixture was stirred at room temperature overnight. The mixture was diluted with ethyl acetate and filtered through a short pad of silica gel. The black solid that remained behind was dissolved

in 1 *N* aqueous NaOH solution and extracted with ethyl acetate (3x). The combined organic layers were washed with brine, dried over anhydrous magnesium sulfate, filtered, and concentrated at reduced pressure. The residue was purified by silica gel flash column chromatography eluting with ethyl acetate to afford 1.58 g (80%) of 4-[(5-chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexanone as a white solid, melting at 115-116 °C, ^{1}H NMR ($CDCl_3$): δ 8.45 (s, 1H), 5.29 (d, 1H), 4.49 (m, 1H), 2.80 (q, 2H), 2.63-2.34 (m, 6H), 1.81 (m, 2H), 1.27 (t, 3H).

Step C: (a) *cis*-*N*-(5-Chloro-6-ethyl-4-pyrimidinyl)-*N'*-phenyl-1,4-cyclohexanediamine and (b) *trans*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N'*-phenyl-1,4-cyclohexanediamine

To a magnetically-stirred solution of 1.00 g (3.94 mmol) of 4-[(5-chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexanone in 50 mL of 1,2-dichloroethane were sequentially added 0.37 g (3.94 mmol) of aniline, 1.67 g (7.88 mmol) of sodium triacetoxyborohydride and 0.24 g (3.94 mmol) of glacial acetic acid under nitrogen. The resultant cloudy white mixture was stirred at room temperature overnight. The mixture was diluted with diethyl ether and washed with 1 *N* aqueous NaOH solution. The aqueous wash was extracted with diethyl ether (2x). The combined organic layers were washed with brine, dried over anhydrous magnesium sulfate, filtered, and concentrated at reduced pressure. The residue was purified by silica gel flash column chromatography eluting with 20%, then 50% ethyl acetate/hexane to afford 0.60 g (46%) of *cis*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N'*-phenyl-1,4-cyclohexanediamine (Ex. 5a) as a white solid, melting at 88-93 °C, ^{1}H NMR ($CDCl_3$): δ 8.42 (s, 1H), 7.18 (dd, 2H), 6.69 (t, 1H), 6.62 (d, 2H), 5.40 (br d, 1H), 4.19 (m, 1H), 3.71 (br s, 1H), 3.54 (m, 1H), 2.79 (q, 2H), 1.89 (m, 4H), 1.73 (m, 4H), 1.27 (t, 3H) and 0.57 g (44%) of *trans*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N'*-phenyl-1,4-cyclohexanediamine (Ex. 5b) as a white solid, melting at 137-139 °C, ^{1}H NMR ($CDCl_3$): δ 8.42 (s, 1H), 7.17 (dd, 2H), 6.68 (t, 1H), 6.60 (d, 2H), 5.21 (d, 1H), 4.03 (m, 1H), 3.51 (s, 1H), 3.31 (m, 1H), 2.79 (q, 2H), 2.21 (m, 4H), 1.37 (m, 4H), 1.26 (t, 3H).

EXAMPLE 6

cis-*N'*-(5-Chloro-6-ethyl-4-pyrimidinyl)-*N*-phenyl-*N*-2-propynyl-1,4-cyclohexanediamine

To a magnetically-stirred solution of 0.40 g (1.21 mmol) of *cis*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N'*-phenyl-1,4-cyclohexanediamine in 10 mL of toluene were sequentially added 0.31 mL (1.81 mmol) of *N*,*N*-diisopropylethylamine and 0.13 mL (1.45 mmol) of 80 wt% propargyl bromide solution in toluene dropwise under nitrogen. The clear red solution was heated at reflux overnight. The resultant mixture was cooled and concentrated at reduced pressure. The residue was purified by silica gel flash column chromatography eluting with 8%, then 100% acetone/dichloromethane to afford 0.32 g (72%) of the title compound (Ex. 6) as an orange viscous oil, ^{1}H NMR ($CDCl_3$): δ 8.42 (s, 1H), 7.28 (m, 2H),

6.99 (m, 2H), 6.86 (t, 1H), 5.57 (d, 1H), 4.31 (m, 1H), 3.99 (d, 2H), 3.70 (m, 1H), 2.80 (q, 2H), 2.22 (t, 1H), 2.04 (m, 2H), 1.94-1.68 (m, 6H), 1.27 (t, 3H).

EXAMPLE 7

(a) *cis*-*N'*-(5-Chloro-6-ethyl-4-pyrimidinyl)-*N,N*-dimethyl-1,4-cyclohexanediamine and (b) *trans*-*N'*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N,N*-dimethyl-1,4-cyclohexanediamine

To a magnetically-stirred solution of 3.00 g (11.82 mmol) of 4-[(5-chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexanone in 120 mL of toluene were sequentially added 0.11 g (0.59 mmol) of *p*-toluenesulfonic acid monohydrate and 5 mL of water containing 0.96 g (11.82 mmol) of dimethylamine hydrochloride. The clear mixture was stirred at reflux for 4 h with the water removed azeotropically through a Dean-Stark trap. The mixture was cooled to room temperature and to this were sequentially added 3.76 g (23.64 mmol) of sodium triacetoxyborohydride and 0.68 mL (11.82 mmol) of glacial acetic acid. The resultant cloudy white mixture was stirred at room temperature overnight. The mixture was quenched with 6 mL of 1 *M* aqueous $NaHCO_3$ solution and concentrated at reduced pressure. The residue was purified by silica gel flash column chromatography eluting with 10%, 12%, then 15% methanol/dichloromethane to afford 0.58 g (17%) of *cis*-*N'*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N,N*-dimethyl-1,4-cyclohexanediamine (Ex. 7a) as a yellow solid, melting at 62-66 °C, ^{1}H NMR ($CDCl_3$): δ 8.40 (s, 1H), 5.48 (d, 1H), 4.22 (m, 1H), 2.78 (q, 2H), 2.32 (s, 6H), 2.16 (m, 1H), 1.95-1.60 (m, 8H), 1.26 (t, 3H) and 0.87 g (26%) of *trans*-*N'*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N,N*-dimethyl-1,4-cyclohexanediamine (Ex. 7b) as a yellow viscous oil, ^{1}H NMR ($CDCl_3$): δ 8.40 (s, 1H), 5.19 (d, 1H), 3.94 (m, 1H), 2.78 (q, 2H), 2.38 (m, 1H), 2.36 (s, 6H), 2.21 (m, 2H), 2.01 (m, 2H), 1.47 (m, 2H), 1.28 (m, 2H), 1.26 (t, 3H).

EXAMPLE 8

cis-4-[(5-Chloro-6-ethyl-4-pyrimidinyl)amino]-*N,N,N*-trimethylcyclohexanaminium iodide

To a magnetically-stirred solution of 0.30 g (1.06 mmol) of *cis*-*N'*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N,N*-dimethyl-1,4-cyclohexanediamine in 10 mL of dichloromethane was added 0.72 mL (11.6 mmol) of iodomethane dropwise under nitrogen. The clear tan solution was stirred at room temperature overnight and concentrated at reduced pressure. The solid residue was oven-dried to afford 0.45 g (100%) of the title compound (Ex. 8) as a white solid, melting at 217-221 °C, ^{1}H NMR (DMSO-d_6): δ 8.38 (s, 1H), 6.44 (d, 1H), 4.21 (m, 1H), 3.35 (m, 1H), 3.03 (s, 3H), 2.72 (q, 2H), 2.13 (m, 2H), 1.98 (m, 2H), 1.78 (m, 2H), 1.67 (m, 2H), 1.18 (t, 3H).

EXAMPLE 9

Step A: *cis*-*N*-(5-Chloro-6-ethyl-4-pyrimidinyl)-1,4-cyclohexanediamine

To a magnetically-stirred solution of 6.45 g (56.5 mmol) of 1,4-cyclohexanediamine (*ca. cis/trans* = 90/10) in 80 mL of acetonitrile was added a solution of 2.00 g (11.3 mmol) of 4,5-dichloro-6-ethylpyrimidine in 20 mL of acetonitrile dropwise under nitrogen. The resultant mixture was stirred at room temperature for 72 h. The cloudy white mixture was

concentrated to a volume of approximately 20 mL and diluted with diethyl ether and water. The layers were saturated with NaCl and were separated, and the aqueous layer was extracted with diethyl ether (2x). The combined organic layers were washed with brine, dried over anhydrous sodium sulfate, filtered, and concentrated at reduced pressure. The oil residue was oven-dried to afford 2.94 g (100%) of *cis*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-1,4-cyclohexanediamine as a tan solid, melting at 76-79 °C, ^{1}H NMR ($CDCl_3$): δ 8.41 (s, 1H), 5.46 (d, 1H), 4.19 (m, 1H), 2.98 (m, 1H), 2.78 (q, 2H), 1.92-1.68 (m, 6H), 1.45 (m, 2H), 1.27 (m, 2H), 1.26 (t, 3H). Azeotropic distillation of the aqueous layer in toluene gave 3.11 g (61% recovery) of 1,4-cyclohexanediamine as an orange oil.

Step B: *cis*-*N*-(5-Chloro-6-ethyl-4-pyrimidinyl)-*N'*-[5-methoxy-6-(methoxymethyl)-4-pyrimidinyl]-1,4-cyclohexanediamine

To a magnetically-stirred solution of 0.30 g (1.18 mmol) of *cis*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-1,4-cyclohexanediamine in 10 mL of toluene were sequentially added 0.31 mL (1.77 mmol) of *N*,*N*-diisopropylethylamine and 0.24 g (1.30 mmol) of 4-chloro-5-methoxy-6-(methoxymethyl)pyrimidine under nitrogen. The clear solution was heated at reflux overnight. The resultant mixture was cooled and concentrated at reduced pressure. The residue was purified by silica gel flash column chromatography eluting with 50%, 100% ethyl acetate/hexane, then 5% methanol/dichloromethane to afford 0.11 g (23%) of the title compound (Ex. 9) as a tan solid, which starts to melt at 104 °C, ^{1}H NMR ($CDCl_3$): δ 8.42 (s, 1H), 8.38 (s, 1H), 5.41 (d, 1H), 5.31 (d, 1H), 4.47 (s, 2H), 4.20 (m, 2H), 3.83 (s, 3H), 3.49 (s, 3H), 2.80 (q, 2H), 1.95 (m, 4H), 1.75 (m, 4H), 1.27 (t, 3H).

EXAMPLE 10

cis-2-[4-[(5-Chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexyl]-1*H*-isoindole-1,3(2*H*)dione

To a magnetically-stirred solution of 0.60 g (2.36 mmol) of *cis*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-1,4-cyclohexanediamine in 20 mL of tetrahydrofuran was added a solution of 0.35 g (2.36 mmol) of phthalic anhydride in 10 mL of tetrahydrofuran dropwise under nitrogen. The clear yellow solution was heated at reflux for 2 h. The resultant mixture was cooled and concentrated. The solid residue was dissolved in 5 mL of *N*,*N*-dimethylformamide and approximately 1 g of polyphosphoric acid was added. The resultant mixture was heated at 80 °C for 2 h and poured onto a mixture of diethyl ether and 1 *M* aqueous $NaHCO_3$ solution. The layers were separated and the aqueous layer was extracted with diethyl ether (2x). The combined organic layers were washed with water and brine, dried over anhydrous magnesium sulfate, filtered, and concentrated at reduced pressure. The residue was purified by silica gel flash column chromatography eluting with 40%, 70%, then 100% ethyl acetate/hexane to afford 0.20 g (22%) of the title compound (Ex. 10) as a white solid, melting at 157-160 °C, ^{1}H NMR ($CDCl_3$): δ 8.43 (s, 1H), 7.84 (m, 2H), 7.72 (m, 2H), 5.88 (d, 1H), 4.47 (m, 1H), 4.25 (tt, 1H), 2.82 (q, 2H), 2.47 (m, 2H), 2.09 (m, 2H), 1.83-1.66 (m, 4H), 1.29 (t, 3H).

EXAMPLE 11

Step A: 4-[(5-Chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexanone *O*-methyloxime

To a magnetically-stirred solution of 1.00 g (3.94 mmol) of 4-[(5-chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexanone in 10 mL of pyridine was added 0.40 g (4.73 mmol) of methoxyamine hydrochloride in one portion. The clear yellow mixture was stirred at room temperature overnight. The resultant mixture was diluted with dichloromethane and washed with water. The aqueous wash was extracted with dichloromethane (2x). The combined organic layers were washed with brine, dried over anhydrous sodium sulfate, filtered, and concentrated at reduced pressure. The residue was purified by silica gel flash column chromatography eluting with 50% ethyl acetate/hexane to afford 0.99 g (89%) of 4-[(5-chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexanone *O*-methyloxime as a white solid, melting at 105-106 °C, ^{1}H NMR ($CDCl_3$): δ 8.42 (s, 1H), 5.25 (d, 1H), 4.24 (m, 1H), 3.84 (s, 3H), 3.18 (m, 1H), 2.79 (q, 2H), 2.47 (m, 1H), 2.36-2.00 (m, 4H), 1.51 (m, 2H), 1.26 (t, 3H).

Step B: (a) *cis*-*N*-(5-Chloro-6-ethyl-4-pyrimidinyl)-*N'*-methoxy-1,4-cyclohexanediamine and (b) *trans*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N'*-methoxy-1,4-cyclohexanediamine

To a cooled (0 °C), magnetically-stirred solution of 0.28 g (1.06 mmol) of 4-[(5-chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexanone *O*-methyloxime in 5 mL of ethanol were sequentially added dropwise 0.44 mL (3.53 mmol) of borane-pyridine complex and 4 mL of 10% aqueous HCl solution. The clear mixture was allowed to warm to room temperature and stirred for 10 min. The resultant mixture was quenched with 1 *M* aqueous $NaHCO_3$ solution and diluted with ethyl acetate. The layers were separated and the aqueous layer was extracted with ethyl acetate (2x). The combined organic layers were washed with brine, dried over anhydrous magnesium sulfate, filtered, and concentrated at reduced pressure. The residue was purified by silica gel flash column chromatography eluting with 55%, 70%, then 100% ethyl acetate/hexane to afford 0.11 g (36%) of *cis*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N'*-methoxy-1,4-cyclohexanediamine (Ex. 11a) as a clear oil, ^{1}H NMR ($CDCl_3$): δ 8.41 (s, 1H), 5.47 (br s, 1H), 5.42 (br d, 1H), 4.18 (m, 1H), 3.58 (s, 3H), 3.07 (m, 1H), 2.78 (q, 2H), 1.87-1.55 (m, 8H), 1.26 (t, 3H) and 0.15 g (50%) of *trans*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N'*-methoxy-1,4-cyclohexanediamine (Ex. 11b) as a white solid, melting at 87-88 °C, ^{1}H NMR ($CDCl_3$): δ 8.41 (s, 1H), 5.43 (br s, 1H), 5.18 (br d, 1H), 3.98 (m, 1H), 3.55 (s, 3H), 2.90 (m, 1H), 2.78 (q, 2H), 2.18 (m, 2H), 2.00 (m, 2H), 1.31 (m, 4H), 1.26 (t, 3H).

EXAMPLE 12

cis-*N*-[4-[(5-Chloro-6-ethyl-4-pyrimidinyl)amino]cyclohexyl]-*N*-methoxyacetamide

To a magnetically-stirred solution of 0.50 g (1.75 mmol) of *cis*-*N*-(5-chloro-6-ethyl-4-pyrimidinyl)-*N'*-methoxy-1,4-cyclohexanediamine in 20 mL of dichloromethane were sequentially added 0.17 mL (1.75 mmol) of acetic anhydride, 0.21 g (1.75 mmol) of 4-(dimethylamino)pyridine and 0.24 mL (1.75 mmol) of triethylamine under nitrogen. The

clear mixture was stirred at room temperature for 72 h. The resultant mixture was diluted with diethyl ether and water. The layers were separated and the aqueous layer was extracted with diethyl ether (2x). The combined organic layers were washed with brine, dried over anhydrous magnesium sulfate, filtered, and concentrated at reduced pressure. The residue was purified by silica gel flash column chromatography eluting with 15%, 17.5%, then 20% acetone/hexane to afford 0.45 g (79%) of the title compound (Ex. 12) as a clear viscous oil, ^{1}H NMR ($CDCl_3$): δ 8.42 (s, 1H), 5.61 (d, 1H), 4.33 (m, 1H), 4.28 (m, 1H), 3.79 (s, 3H), 2.80 (q, 2H), 2.16 (s, 3H), 2.06 (m, 2H), 1.97-1.68 (m, 6H), 1.27 (t, 3H).

By the procedures described herein together with methods known in the art, the following compounds of Tables 1 to 26 can be prepared. The following abbreviations are used in the Tables which follow: *t* = tertiary, *s* = secondary, *n* = normal, *i* = iso, *c* = cyclo, Me = methyl, Et = ethyl, Pr = propyl, Bu = butyl, Pen = pentyl, *t*-Am = 1,1-dimethylpropyl, Hex = hexyl, Ph = phenyl, Bn = phenylmethyl, OMe = methoxy, OEt = ethoxy, CN = cyano, SMe = methylthio,

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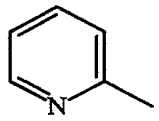

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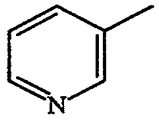

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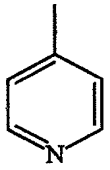

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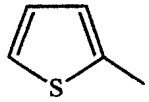

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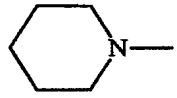

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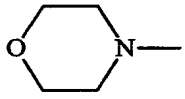

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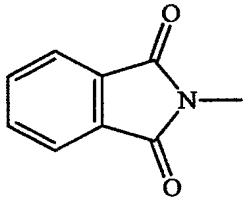

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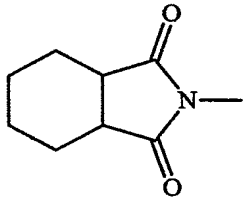

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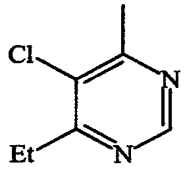

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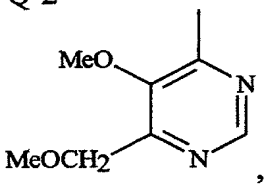

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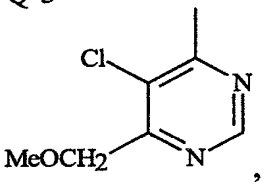

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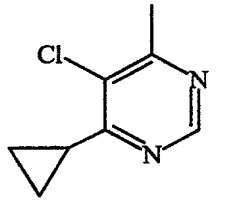

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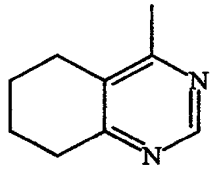

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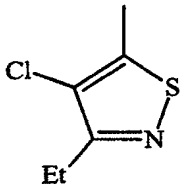

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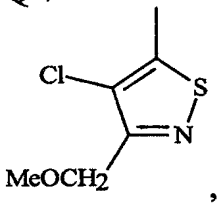

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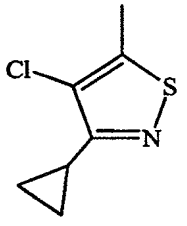
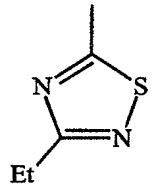
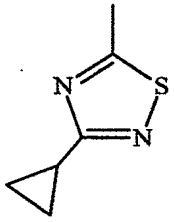
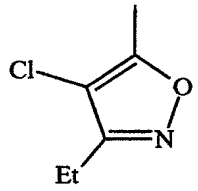
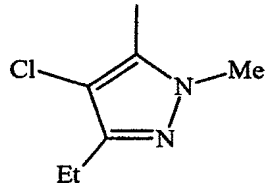
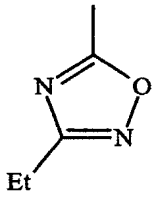


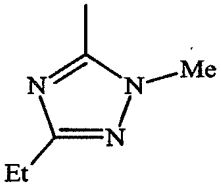
Q-9 =  ,

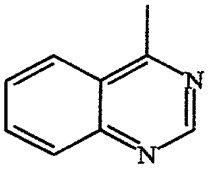
Q-10 =  ,

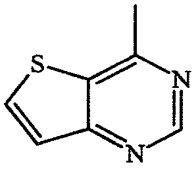
Q-11 =  ,

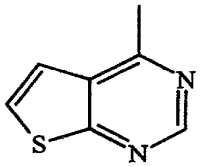
Q-12 =  ,

Q-13 =  ,

Q-14 =  ,

Q-15 =  ,

Q-16 =  and

Q-17 =  .

Key for Tables 1-26

Tables 1 to 3

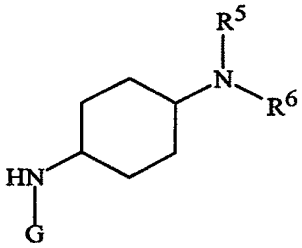
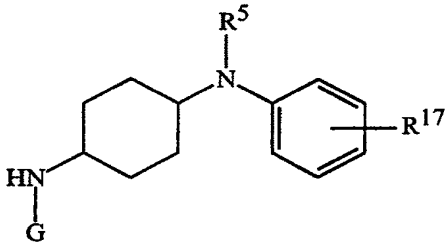
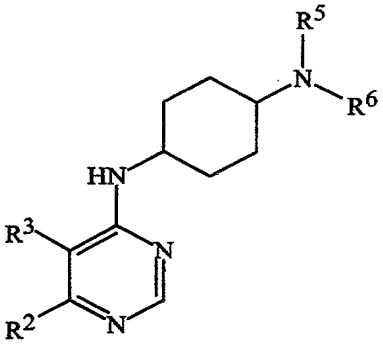


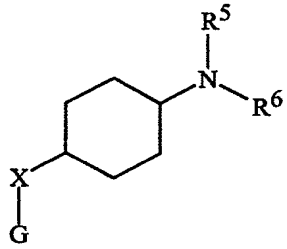
Table 4



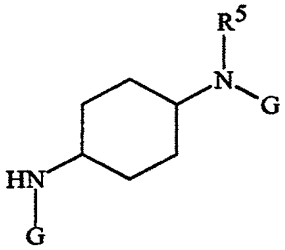
Tables 5 to 8



Tables 9 to 16



Tables 17 and 18



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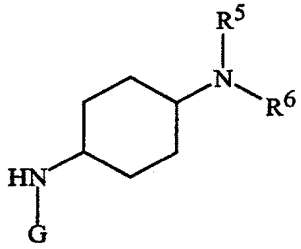


Tables 20

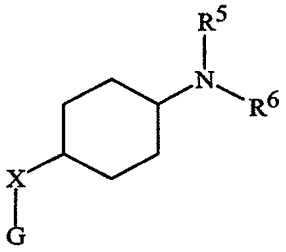


Table 21

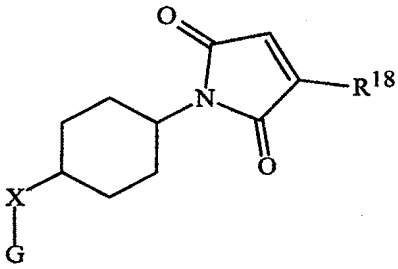


Table 22

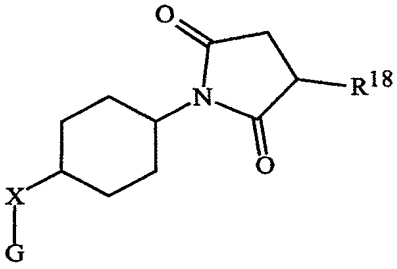
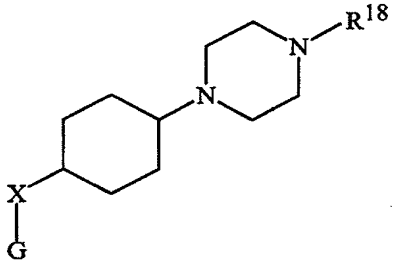


Table 23



Tables 24 to 26

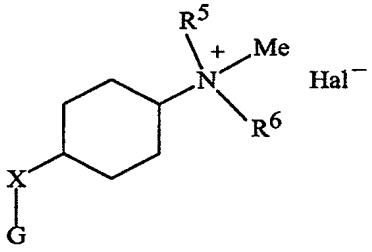


TABLE 1

			COLUMN 1	COLUMN 2	COLUMN 3
1	G = Q-1; R^6 = Me;	R^5 =	Me	Et	*n*-Pr
2	G = Q-1; R^6 = Me;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
3	G = Q-1; R^6 = Me;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
4	G = Q-1; R^6 = Me;	R^5 =	*c*-Hex	Bn	$CH_2CH=CH_2$
5	G = Q-1; R^6 = Me;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
6	G = Q-1; R^6 = Me;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
7	G = Q-1; R^6 = Me;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
8	G = Q-1; R^6 = Me;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
9	G = Q-1; R^6 = Me;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
10	G = Q-1; R^6 = Me;	R^5 =	OH	OMe	OEt
11	G = Q-1; R^6 = Me;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
12	G = Q-1; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
13	G = Q-1; R^6 = Me;	R^5 =	COMe	COEt	$COCF_3$
14	G = Q-1; R^6 = Me;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	COPh
15	G = Q-1; R^6 = Me;	R^5 =	CH_2CO_2Me	CO_2Me	CO_2Et
16	G = Q-1; R^6 = Me;	R^5 =	CO_2Bn	CONHMe	SO_2Ph
17	G = Q-1; R^6 = Ph;	R^5 =	Me	Et	*n*-Pr
18	G = Q-1; R^6 = Ph;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
19	G = Q-1; R^6 = Ph;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex

20	G = Q-1; R^6 = Ph;	R^5 =	*c*-Pen	Bn	$CH_2CH=CH_2$
21	G = Q-1; R^6 = Ph;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
22	G = Q-1; R^6 = Ph;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
23	G = Q-1; R^6 = Ph;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
24	G = Q-1; R^6 = Ph;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
25	G = Q-1; R^6 = Ph;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
26	G = Q-1; R^6 = Ph;	R^5 =	OH	OMe	OEt
27	G = Q-1; R^6 = Ph;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
28	G = Q-1; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
29	G = Q-1; R^6 = Ph;	R^5 =	COMe	COEt	$COCF_3$
30	G = Q-1; R^6 = Ph;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	COPh
31	G = Q-1; R^6 = Ph;	R^5 =	CH_2CO_2Me	CO_2Me	CO_2Et
32	G = Q-1; R^6 = Ph;	R^5 =	CO_2Bn	CONHMe	SO_2Ph
33	G = Q-2; R^6 = Me;	R^5 =	Me	Et	*n*-Pr
34	G = Q-2; R^6 = Me;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
35	G = Q-2; R^6 = Me;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
36	G = Q-2; R^6 = Me;	R^5 =	*c*-Hex	Bn	$CH_2CH=CH_2$
37	G = Q-2; R^6 = Me;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
38	G = Q-2; R^6 = Me;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
39	G = Q-2; R^6 = Me;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
40	G = Q-2; R^6 = Me;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
41	G = Q-2; R^6 = Me;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
42	G = Q-2; R^6 = Me;	R^5 =	OH	OMe	OEt
43	G = Q-2; R^6 = Me;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
44	G = Q-2; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
45	G = Q-2; R^6 = Me;	R^5 =	COMe	COEt	$COCF_3$
46	G = Q-2; R^6 = Me;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	COPh
47	G = Q-2; R^6 = Me;	R^5 =	CH_2CO_2Me	CO_2Me	CO_2Et
48	G = Q-2; R^6 = Me;	R^5 =	CO_2Bn	CONHMe	SO_2Ph
49	G = Q-2; R^6 = Ph;	R^5 =	Me	Et	*n*-Pr
50	G = Q-2; R^6 = Ph;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
51	G = Q-2; R^6 = Ph;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
52	G = Q-2; R^6 = Ph;	R^5 =	*c*-Pen	Bn	$CH_2CH=CH_2$
53	G = Q-2; R^6 = Ph;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
54	G = Q-2; R^6 = Ph;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
55	G = Q-2; R^6 = Ph;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
56	G = Q-2; R^6 = Ph;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
57	G = Q-2; R^6 = Ph;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
58	G = Q-2; R^6 = Ph;	R^5 =	OH	OMe	OEt
59	G = Q-2; R^6 = Ph;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr

60	G = Q-2; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
61	G = Q-2; R^6 = Ph;	R^5 =	COMe	COEt	$COCF_3$
62	G = Q-2; R^6 = Ph;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	COPh
63	G = Q-2; R^6 = Ph;	R^5 =	CH_2CO_2Me	CO_2Me	CO_2Et
64	G = Q-2; R^6 = Ph;	R^5 =	CO_2Bn	CONHMe	SO_2Ph
65	G = Q-3; R^6 = Me;	R^5 =	Me	Et	*n*-Pr
66	G = Q-3; R^6 = Me;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
67	G = Q-3; R^6 = Me;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
68	G = Q-3; R^6 = Me;	R^5 =	*c*-Hex	Bn	$CH_2CH=CH_2$
69	G = Q-3; R^6 = Me;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
70	G = Q-3; R^6 = Me;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
71	G = Q-3; R^6 = Me;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
72	G = Q-3; R^6 = Me;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
73	G = Q-3; R^6 = Me;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
74	G = Q-3; R^6 = Me;	R^5 =	OH	OMe	OEt
75	G = Q-3; R^6 = Me;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
76	G = Q-3; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
77	G = Q-3; R^6 = Me;	R^5 =	COMe	COEt	$COCF_3$
78	G = Q-3; R^6 = Me;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	COPh
79	G = Q-3; R^6 = Me;	R^5 =	CH_2CO_2Me	CO_2Me	CO_2Et
80	G = Q-3; R^6 = Me;	R^5 =	CO_2Bn	CONHMe	SO_2Ph
81	G = Q-3; R^6 = Ph;	R^5 =	Me	Et	*n*-Pr
82	G = Q-3; R^6 = Ph;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
83	G = Q-3; R^6 = Ph;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
84	G = Q-3; R^6 = Ph;	R^5 =	*c*-Pen	Bn	$CH_2CH=CH_2$
85	G = Q-3; R^6 = Ph;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
86	G = Q-3; R^6 = Ph;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
87	G = Q-3; R^6 = Ph;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
88	G = Q-3; R^6 = Ph;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
89	G = Q-3; R^6 = Ph;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
90	G = Q-3; R^6 = Ph;	R^5 =	OH	OMe	OEt
91	G = Q-3; R^6 = Ph;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
92	G = Q-3; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
93	G = Q-3; R^6 = Ph;	R^5 =	COMe	COEt	$COCF_3$
94	G = Q-3; R^6 = Ph;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	COPh
95	G = Q-3; R^6 = Ph;	R^5 =	CH_2CO_2Me	CO_2Me	CO_2Et
96	G = Q-3; R^6 = Ph;	R^5 =	CO_2Bn	CONHMe	SO_2Ph

TABLE 2

			COLUMN 1	COLUMN 2	COLUMN 3
1	G = Q-1; R^6 = COMe;	R^5 =	Et	*i*-Pr	*c*-Pr
2	G = Q-1; R^6 = COMe;	R^5 =	*c*-Hex	Bn	$CH_2C{\equiv}CH$
3	G = Q-1; R^6 = COMe;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
4	G = Q-1; R^6 = COMe;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
5	G = Q-1; R^6 = COMe;	R^5 =	OH	OMe	OBn
6	G = Q-1; R^6 = COMe;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
7	G = Q-1; R^6 = CO-*t*-Bu;	R^5 =	Me	Et	*i*-Pr
8	G = Q-1; R^6 = CO-*t*-Bu;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
9	G = Q-1; R^6 = CO-*t*-Bu;	R^5 =	Bn	Ph	$CH_2C{\equiv}CH$
10	G = Q-1; R^6 = CO-*t*-Bu;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
11	G = Q-1; R^6 = CO-*t*-Bu;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
12	G = Q-1; R^6 = CO-*t*-Bu;	R^5 =	OH	OMe	OBn
13	G = Q-1; R^6 = CO-*t*-Bu;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
14	G = Q-1; R^6 = CO_2Me;	R^5 =	Et	*i*-Pr	*c*-Pr
15	G = Q-1; R^6 = CO_2Me;	R^5 =	*c*-Hex	Bn	$CH_2C{\equiv}CH$
16	G = Q-1; R^6 = CO_2Me;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
17	G = Q-1; R^6 = CO_2Me;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
18	G = Q-1; R^6 = CO_2Me;	R^5 =	OH	OMe	OBn
19	G = Q-1; R^6 = CO_2Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
20	G = Q-1; R^6 = CO_2-*t*-Bu;	R^5 =	Me	Et	*i*-Pr
21	G = Q-1; R^6 = CO_2-*t*-Bu;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
22	G = Q-1; R^6 = CO_2-*t*-Bu;	R^5 =	Bn	Ph	$CH_2C{\equiv}CH$
23	G = Q-1; R^6 = CO_2-*t*-Bu;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
24	G = Q-1; R^6 = CO_2-*t*-Bu;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
25	G = Q-1; R^6 = CO_2-*t*-Bu;	R^5 =	OH	OMe	OBn
26	G = Q-1; R^6 = CO_2-*t*-Bu;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
27	G = Q-1; R^6 = $CONMe_2$;	R^5 =	Me	Et	*i*-Pr
28	G = Q-1; R^6 = $CONMe_2$;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
29	G = Q-1; R^6 = $CONMe_2$;	R^5 =	Bn	Ph	$CH_2C{\equiv}CH$
30	G = Q-1; R^6 = $CONMe_2$;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
31	G = Q-1; R^6 = $CONMe_2$;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
32	G = Q-1; R^6 = $CONMe_2$;	R^5 =	OH	OMe	OBn
33	G = Q-1; R^6 = $CONMe_2$;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
34	G = Q-1; R^6 = SO_2Me;	R^5 =	Me	Et	*i*-Pr
35	G = Q-1; R^6 = SO_2Me;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
36	G = Q-1; R^6 = SO_2Me;	R^5 =	Bn	Ph	$CH_2C{\equiv}CH$
37	G = Q-1; R^6 = SO_2Me;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe

38	G = Q-1; R^6 = SO_2Me;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF=CF_2$
39	G = Q-1; R^6 = SO_2Me;	R^5 =	OH	OMe	OBn
40	G = Q-1; R^6 = SO_2Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CH_2CO_2Me
41	G = Q-1; R^6 = SO_2CF_3;	R^5 =	Me	Et	*i*-Pr
42	G = Q-1; R^6 = SO_2CF_3;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
43	G = Q-1; R^6 = SO_2CF_3;	R^5 =	Bn	Ph	$CH_2C\equiv CH$
44	G = Q-1; R^6 = SO_2CF_3;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
45	G = Q-1; R^6 = SO_2CF_3;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF=CF_2$
46	G = Q-1; R^6 = SO_2CF_3;	R^5 =	OH	OMe	OBn
47	G = Q-1; R^6 = SO_2CF_3;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CH_2CO_2Me
48	G = Q-1; R^6 = $P(O)(OMe)_2$;	R^5 =	Me	Et	*i*-Pr
49	G = Q-1; R^6 = $P(O)(OMe)_2$;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
50	G = Q-1; R^6 = $P(O)(OMe)_2$;	R^5 =	Bn	Ph	$CH_2C\equiv CH$
51	G = Q-1; R^6 = $P(O)(OMe)_2$;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
52	G = Q-1; R^6 = $P(O)(OMe)_2$;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF=CF_2$
53	G = Q-1; R^6 = $P(O)(OMe)_2$;	R^5 =	OH	OMe	OBn
54	G = Q-1; R^6 = $P(O)(OMe)_2$;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CH_2CO_2Me
55	G = Q-1; R^6 = P(O)(OMe)Me;	R^5 =	Me	Et	*i*-Pr
56	G = Q-1; R^6 = P(O)(OMe)Me;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
57	G = Q-1; R^6 = P(O)(OMe)Me;	R^5 =	Bn	Ph	$CH_2C\equiv CH$
58	G = Q-1; R^6 = P(O)(OMe)Me;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
59	G = Q-1; R^6 = P(O)(OMe)Me;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF=CF_2$
60	G = Q-1; R^6 = P(O)(OMe)Me;	R^5 =	OH	OMe	OBn
61	G = Q-1; R^6 = P(O)(OMe)Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CH_2CO_2Me
62	G = Q-2; R^6 = COMe;	R^5 =	Et	*i*-Pr	*c*-Pr
63	G = Q-2; R^6 = COMe;	R^5 =	*c*-Hex	Bn	$CH_2C\equiv CH$
64	G = Q-2; R^6 = COMe;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
65	G = Q-2; R^6 = COMe;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF=CF_2$
66	G = Q-2; R^6 = COMe;	R^5 =	OH	OMe	OBn
67	G = Q-2; R^6 = COMe;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CH_2CO_2Me
68	G = Q-2; R^6 = CO-*t*-Bu;	R^5 =	Me	Et	*i*-Pr
69	G = Q-2; R^6 = CO-*t*-Bu;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
70	G = Q-2; R^6 = CO-*t*-Bu;	R^5 =	Bn	Ph	$CH_2C\equiv CH$
71	G = Q-2; R^6 = CO-*t*-Bu;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
72	G = Q-2; R^6 = CO-*t*-Bu;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF=CF_2$
73	G = Q-2; R^6 = CO-*t*-Bu;	R^5 =	OH	OMe	OBn
74	G = Q-2; R^6 = CO-*t*-Bu;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CH_2CO_2Me
75	G = Q-2; R^6 = CO_2Me;	R^5 =	Et	*i*-Pr	*c*-Pr
76	G = Q-2; R^6 = CO_2Me;	R^5 =	*c*-Hex	Bn	$CH_2C\equiv CH$
77	G = Q-2; R^6 = CO_2Me;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe

78	G = Q-2; R^6 = CO_2Me;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF=CF_2$
79	G = Q-2; R^6 = CO_2Me;	R^5 =	OH	OMe	OBn
80	G = Q-2; R^6 = CO_2Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CH_2CO_2Me
81	G = Q-2; R^6 = CO_2-*t*-Bu;	R^5 =	Me	Et	*i*-Pr
82	G = Q-2; R^6 = CO_2-*t*-Bu;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
83	G = Q-2; R^6 = CO_2-*t*-Bu;	R^5 =	Bn	Ph	$CH_2C\equiv CH$
84	G = Q-2; R^6 = CO_2-*t*-Bu;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
85	G = Q-2; R^6 = CO_2-*t*-Bu;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF=CF_2$
86	G = Q-2; R^6 = CO_2-*t*-Bu;	R^5 =	OH	OMe	OBn
87	G = Q-2; R^6 = CO_2-*t*-Bu;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CH_2CO_2Me
88	G = Q-2; R^6 = $CONMe_2$;	R^5 =	Me	Et	*i*-Pr
89	G = Q-2; R^6 = $CONMe_2$;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
90	G = Q-2; R^6 = $CONMe_2$;	R^5 =	Bn	Ph	$CH_2C\equiv CH$
91	G = Q-2; R^6 = $CONMe_2$;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
92	G = Q-2; R^6 = $CONMe_2$;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF=CF_2$
93	G = Q-2; R^6 = $CONMe_2$;	R^5 =	OH	OMe	OBn
94	G = Q-2; R^6 = $CONMe_2$;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CH_2CO_2Me
95	G = Q-2; R^6 = SO_2Me;	R^5 =	Me	Et	*i*-Pr
96	G = Q-2; R^6 = SO_2Me;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
97	G = Q-2; R^6 = SO_2Me;	R^5 =	Bn	Ph	$CH_2C\equiv CH$
98	G = Q-2; R^6 = SO_2Me;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
99	G = Q-2; R^6 = SO_2Me;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF=CF_2$
100	G = Q-2; R^6 = SO_2Me;	R^5 =	OH	OMe	OBn
101	G = Q-2; R^6 = SO_2Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CH_2CO_2Me
102	G = Q-2; R^6 = SO_2CF_3;	R^5 =	Me	Et	*i*-Pr
103	G = Q-2; R^6 = SO_2CF_3;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
104	G = Q-2; R^6 = SO_2CF_3;	R^5 =	Bn	Ph	$CH_2C\equiv CH$
105	G = Q-2; R^6 = SO_2CF_3;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
106	G = Q-2; R^6 = SO_2CF_3;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF=CF_2$
107	G = Q-2; R^6 = SO_2CF_3;	R^5 =	OH	OMe	OBn
108	G = Q-2; R^6 = SO_2CF_3;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CH_2CO_2Me
109	G = Q-2; R^6 = $P(O)(OMe)_2$;	R^5 =	Me	Et	*i*-Pr
110	G = Q-2; R^6 = $P(O)(OMe)_2$;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
111	G = Q-2; R^6 = $P(O)(OMe)_2$;	R^5 =	Bn	Ph	$CH_2C\equiv CH$
112	G = Q-2; R^6 = $P(O)(OMe)_2$;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
113	G = Q-2; R^6 = $P(O)(OMe)_2$;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF=CF_2$
114	G = Q-2; R^6 = $P(O)(OMe)_2$;	R^5 =	OH	OMe	OBn
115	G = Q-2; R^6 = $P(O)(OMe)_2$;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CH_2CO_2Me
116	G = Q-2; R^6 = P(O)(OMe)Me;	R^5 =	Me	Et	*i*-Pr
117	G = Q-2; R^6 = P(O)(OMe)Me;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex

118	G = Q-2; R^6 = P(O)(OMe)Me;	R^5 =	Bn	Ph	$CH_2C{\equiv}CH$
119	G = Q-2; R^6 = P(O)(OMe)Me;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
120	G = Q-2; R^6 = P(O)(OMe)Me;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
121	G = Q-2; R^6 = P(O)(OMe)Me;	R^5 =	OH	OMe	OBn
122	G = Q-2; R^6 = P(O)(OMe)Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
123	G = Q-3; R^6 = COMe;	R^5 =	Et	*i*-Pr	*c*-Pr
124	G = Q-3; R^6 = COMe;	R^5 =	*c*-Hex	Bn	$CH_2C{\equiv}CH$
125	G = Q-3; R^6 = COMe;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
126	G = Q-3; R^6 = COMe;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
127	G = Q-3; R^6 = COMe;	R^5 =	OH	OMe	OBn
128	G = Q-3; R^6 = COMe;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
129	G = Q-3; R^6 = CO-*t*-Bu;	R^5 =	Me	Et	*i*-Pr
130	G = Q-3; R^6 = CO-*t*-Bu;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
131	G = Q-3; R^6 = CO-*t*-Bu;	R^5 =	Bn	Ph	$CH_2C{\equiv}CH$
132	G = Q-3; R^6 = CO-*t*-Bu;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
133	G = Q-3; R^6 = CO-*t*-Bu;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
134	G = Q-3; R^6 = CO-*t*-Bu;	R^5 =	OH	OMe	OBn
135	G = Q-3; R^6 = CO-*t*-Bu;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
136	G = Q-3; R^6 = CO_2Me;	R^5 =	Et	*i*-Pr	*c*-Pr
137	G = Q-3; R^6 = CO_2Me;	R^5 =	*c*-Hex	Bn	$CH_2C{\equiv}CH$
138	G = Q-3; R^6 = CO_2Me;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
139	G = Q-3; R^6 = CO_2Me;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
140	G = Q-3; R^6 = CO_2Me;	R^5 =	OH	OMe	OBn
141	G = Q-3; R^6 = CO_2Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
142	G = Q-3; R^6 = CO_2-*t*-Bu;	R^5 =	Me	Et	*i*-Pr
143	G = Q-3; R^6 = CO_2-*t*-Bu;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
144	G = Q-3; R^6 = CO_2-*t*-Bu;	R^5 =	Bn	Ph	$CH_2C{\equiv}CH$
145	G = Q-3; R^6 = CO_2-*t*-Bu;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
146	G = Q-3; R^6 = CO_2-*t*-Bu;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
147	G = Q-3; R^6 = CO_2-*t*-Bu;	R^5 =	OH	OMe	OBn
148	G = Q-3; R^6 = CO_2-*t*-Bu;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
149	G = Q-3; R^6 = $CONMe_2$;	R^5 =	Me	Et	*i*-Pr
150	G = Q-3; R^6 = $CONMe_2$;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
151	G = Q-3; R^6 = $CONMe_2$;	R^5 =	Bn	Ph	$CH_2C{\equiv}CH$
152	G = Q-3; R^6 = $CONMe_2$;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
153	G = Q-3; R^6 = $CONMe_2$;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
154	G = Q-3; R^6 = $CONMe_2$;	R^5 =	OH	OMe	OBn
155	G = Q-3; R^6 = $CONMe_2$;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
156	G = Q-3; R^6 = SO_2Me;	R^5 =	Me	Et	*i*-Pr

157	G = Q-3; R^6 = SO_2Me;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
158	G = Q-3; R^6 = SO_2Me;	R^5 =	Bn	Ph	$CH_2C{\equiv}CH$
159	G = Q-3; R^6 = SO_2Me;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
160	G = Q-3; R^6 = SO_2Me;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
161	G = Q-3; R^6 = SO_2Me;	R^5 =	OH	OMe	OBn
162	G = Q-3; R^6 = SO_2Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
163	G = Q-3; R^6 = SO_2CF_3;	R^5 =	Me	Et	*i*-Pr
164	G = Q-3; R^6 = SO_2CF_3;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
165	G = Q-3; R^6 = SO_2CF_3;	R^5 =	Bn	Ph	$CH_2C{\equiv}CH$
166	G = Q-3; R^6 = SO_2CF_3;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
167	G = Q-3; R^6 = SO_2CF_3;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
168	G = Q-3; R^6 = SO_2CF_3;	R^5 =	OH	OMe	OBn
169	G = Q-3; R^6 = SO_2CF_3;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
170	G = Q-3; R^6 = $P(O)(OMe)_2$;	R^5 =	Me	Et	*i*-Pr
171	G = Q-3; R^6 = $P(O)(OMe)_2$;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
172	G = Q-3; R^6 = $P(O)(OMe)_2$;	R^5 =	Bn	Ph	$CH_2C{\equiv}CH$
173	G = Q-3; R^6 = $P(O)(OMe)_2$;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
174	G = Q-3; R^6 = $P(O)(OMe)_2$;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
175	G = Q-3; R^6 = $P(O)(OMe)_2$;	R^5 =	OH	OMe	OBn
176	G = Q-3; R^6 = $P(O)(OMe)_2$;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me
177	G = Q-3; R^6 = P(O)(OMe)Me;	R^5 =	Me	Et	*i*-Pr
178	G = Q-3; R^6 = P(O)(OMe)Me;	R^5 =	*c*-Pr	*n*-Bu	*c*-Hex
179	G = Q-3; R^6 = P(O)(OMe)Me;	R^5 =	Bn	Ph	$CH_2C{\equiv}CH$
180	G = Q-3; R^6 = P(O)(OMe)Me;	R^5 =	CH_2CN	CH_2CONMe_2	CH_2OMe
181	G = Q-3; R^6 = P(O)(OMe)Me;	R^5 =	CH_2SMe	CH_2SO_2Me	$(CH_2)_2CF{=}CF_2$
182	G = Q-3; R^6 = P(O)(OMe)Me;	R^5 =	OH	OMe	OBn
183	G = Q-3; R^6 = P(O)(OMe)Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CH_2CO_2Me

TABLE 3

			COLUMN		
			1	2	3
1	G = Q-1; R^6 = 2-Pyr;	R^5 =	Me	Et	*n*-Pr
2	G = Q-1; R^6 = 2-Pyr;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
3	G = Q-1; R^6 = 2-Pyr;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
4	G = Q-1; R^6 = 2-Pyr;	R^5 =	*c*-Pen	Bn	$CH_2CH{=}CH_2$
5	G = Q-1; R^6 = 2-Pyr;	R^5 =	$CH_2CCl{=}CH_2$	$CH_2C{\equiv}CH$	CH_2-*c*-Pr
6	G = Q-1; R^6 = 2-Pyr;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
7	G = Q-1; R^6 = 2-Pyr;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
8	G = Q-1; R^6 = 2-Pyr;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
9	G = Q-1; R^6 = 2-Pyr;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF{=}CF_2$

10	G = Q-1; R^6 = 2-Pyr;	R^5 =	OH	OMe	OEt
11	G = Q-1; R^6 = 2-Pyr;	R^5 =	OBn	$OCH_2C{\equiv}CH$	OCH_2-*c*-Pr
12	G = Q-1; R^6 = 2-Pyr;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CHO
13	G = Q-1; R^6 = 2-Pyr;	R^5 =	COMe	COEt	$COCF_3$
14	G = Q-1; R^6 = 2-Pyr;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
15	G = Q-1; R^6 = 2-Pyr;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
16	G = Q-1; R^6 = 2-Pyr;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
17	G = Q-1; R^6 = 2-Pyr;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
18	G = Q-1; R^6 = 2-Pyr;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
19	G = Q-1; R^6 = 2-Pyr;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
20	G = Q-1; R^6 = 3-Pyr;	R^5 =	Me	Et	*n*-Pr
21	G = Q-1; R^6 = 3-Pyr;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
22	G = Q-1; R^6 = 3-Pyr;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
23	G = Q-1; R^6 = 3-Pyr;	R^5 =	*c*-Pen	Bn	$CH_2CH{=}CH_2$
24	G = Q-1; R^6 = 3-Pyr;	R^5 =	$CH_2CCl{=}CH_2$	$CH_2C{\equiv}CH$	CH_2-*c*-Pr
25	G = Q-1; R^6 = 3-Pyr;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
26	G = Q-1; R^6 = 3-Pyr;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
27	G = Q-1; R^6 = 3-Pyr;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
28	G = Q-1; R^6 = 3-Pyr;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF{=}CF_2$
29	G = Q-1; R^6 = 3-Pyr;	R^5 =	OH	OMe	OEt
30	G = Q-1; R^6 = 3-Pyr;	R^5 =	OBn	$OCH_2C{\equiv}CH$	OCH_2-*c*-Pr
31	G = Q-1; R^6 = 3-Pyr;	R^5 =	OCH_2CN	$O(CH_2)_2CF{=}CF_2$	CHO
32	G = Q-1; R^6 = 3-Pyr;	R^5 =	COMe	COEt	$COCF_3$
33	G = Q-1; R^6 = 3-Pyr;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
34	G = Q-1; R^6 = 3-Pyr;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
35	G = Q-1; R^6 = 3-Pyr;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
36	G = Q-1; R^6 = 3-Pyr;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
37	G = Q-1; R^6 = 3-Pyr;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
38	G = Q-1; R^6 = 3-Pyr;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
39	G = Q-1; R^6 = 4-Pyr;	R^5 =	Me	Et	*n*-Pr
40	G = Q-1; R^6 = 4-Pyr;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
41	G = Q-1; R^6 = 4-Pyr;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
42	G = Q-1; R^6 = 4-Pyr;	R^5 =	*c*-Pen	Bn	$CH_2CH{=}CH_2$
43	G = Q-1; R^6 = 4-Pyr;	R^5 =	$CH_2CCl{=}CH_2$	$CH_2C{\equiv}CH$	CH_2-*c*-Pr
44	G = Q-1; R^6 = 4-Pyr;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
45	G = Q-1; R^6 = 4-Pyr;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
46	G = Q-1; R^6 = 4-Pyr;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
47	G = Q-1; R^6 = 4-Pyr;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF{=}CF_2$
48	G = Q-1; R^6 = 4-Pyr;	R^5 =	OH	OMe	OEt
49	G = Q-1; R^6 = 4-Pyr;	R^5 =	OBn	$OCH_2C{\equiv}CH$	OCH_2-*c*-Pr

50	G = Q-1; R^6 = 4-Pyr;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
51	G = Q-1; R^6 = 4-Pyr;	R^5 =	COMe	COEt	$COCF_3$
52	G = Q-1; R^6 = 4-Pyr;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
53	G = Q-1; R^6 = 4-Pyr;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
54	G = Q-1; R^6 = 4-Pyr;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
55	G = Q-1; R^6 = 4-Pyr;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
56	G = Q-1; R^6 = 4-Pyr;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
57	G = Q-1; R^6 = 4-Pyr;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
58	G = Q-1; R^6 = 2-Th;	R^5 =	Me	Et	*n*-Pr
59	G = Q-1; R^6 = 2-Th;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
60	G = Q-1; R^6 = 2-Th;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
61	G = Q-1; R^6 = 2-Th;	R^5 =	*c*-Pen	Bn	$CH_2CH=CH_2$
62	G = Q-1; R^6 = 2-Th;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
63	G = Q-1; R^6 = 2-Th;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
64	G = Q-1; R^6 = 2-Th;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
65	G = Q-1; R^6 = 2-Th;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
66	G = Q-1; R^6 = 2-Th;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
67	G = Q-1; R^6 = 2-Th;	R^5 =	OH	OMe	OEt
68	G = Q-1; R^6 = 2-Th;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
69	G = Q-1; R^6 = 2-Th;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
70	G = Q-1; R^6 = 2-Th;	R^5 =	COMe	COEt	$COCF_3$
71	G = Q-1; R^6 = 2-Th;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
72	G = Q-1; R^6 = 2-Th;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
73	G = Q-1; R^6 = 2-Th;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
74	G = Q-1; R^6 = 2-Th;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
75	G = Q-1; R^6 = 2-Th;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
76	G = Q-1; R^6 = 2-Th;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
77	G = Q-2; R^6 = 2-Pyr;	R^5 =	Me	Et	*n*-Pr
78	G = Q-2; R^6 = 2-Pyr;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
79	G = Q-2; R^6 = 2-Pyr;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
80	G = Q-2; R^6 = 2-Pyr;	R^5 =	*c*-Pen	Bn	$CH_2CH=CH_2$
81	G = Q-2; R^6 = 2-Pyr;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
82	G = Q-2; R^6 = 2-Pyr;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
83	G = Q-2; R^6 = 2-Pyr;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
84	G = Q-2; R^6 = 2-Pyr;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
85	G = Q-2; R^6 = 2-Pyr;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
86	G = Q-2; R^6 = 2-Pyr;	R^5 =	OH	OMe	OEt
87	G = Q-2; R^6 = 2-Pyr;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
88	G = Q-2; R^6 = 2-Pyr;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
89	G = Q-2; R^6 = 2-Pyr;	R^5 =	COMe	COEt	$COCF_3$

90	G = Q-2; R^6 = 2-Pyr;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
91	G = Q-2; R^6 = 2-Pyr;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
92	G = Q-2; R^6 = 2-Pyr;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
93	G = Q-2; R^6 = 2-Pyr;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
94	G = Q-2; R^6 = 2-Pyr;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
95	G = Q-2; R^6 = 2-Pyr;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
96	G = Q-2; R^6 = 3-Pyr;	R^5 =	Me	Et	*n*-Pr
97	G = Q-2; R^6 = 3-Pyr;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
98	G = Q-2; R^6 = 3-Pyr;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
99	G = Q-2; R^6 = 3-Pyr;	R^5 =	*c*-Pen	Bn	$CH_2CH=CH_2$
100	G = Q-2; R^6 = 3-Pyr;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
101	G = Q-2; R^6 = 3-Pyr;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
102	G = Q-2; R^6 = 3-Pyr;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
103	G = Q-2; R^6 = 3-Pyr;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
104	G = Q-2; R^6 = 3-Pyr;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
105	G = Q-2; R^6 = 3-Pyr;	R^5 =	OH	OMe	OEt
106	G = Q-2; R^6 = 3-Pyr;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
107	G = Q-2; R^6 = 3-Pyr;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
108	G = Q-2; R^6 = 3-Pyr;	R^5 =	COMe	COEt	$COCF_3$
109	G = Q-2; R^6 = 3-Pyr;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
110	G = Q-2; R^6 = 3-Pyr;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
111	G = Q-2; R^6 = 3-Pyr;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
112	G = Q-2; R^6 = 3-Pyr;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
113	G = Q-2; R^6 = 3-Pyr;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
114	G = Q-2; R^6 = 3-Pyr;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
115	G = Q-2; R^6 = 4-Pyr;	R^5 =	Me	Et	*n*-Pr
116	G = Q-2; R^6 = 4-Pyr;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
117	G = Q-2; R^6 = 4-Pyr;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
118	G = Q-2; R^6 = 4-Pyr;	R^5 =	*c*-Pen	Bn	$CH_2CH=CH_2$
119	G = Q-2; R^6 = 4-Pyr;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
120	G = Q-2; R^6 = 4-Pyr;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
121	G = Q-2; R^6 = 4-Pyr;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
122	G = Q-2; R^6 = 4-Pyr;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
123	G = Q-2; R^6 = 4-Pyr;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
124	G = Q-2; R^6 = 4-Pyr;	R^5 =	OH	OMe	OEt
125	G = Q-2; R^6 = 4-Pyr;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
126	G = Q-2; R^6 = 4-Pyr;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
127	G = Q-2; R^6 = 4-Pyr;	R^5 =	COMe	COEt	$COCF_3$
128	G = Q-2; R^6 = 4-Pyr;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
129	G = Q-2; R^6 = 4-Pyr;	R^5 =	COPh	CH_2CO_2Me	CO_2Me

130	G = Q-2; R^6 = 4-Pyr;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
131	G = Q-2; R^6 = 4-Pyr;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
132	G = Q-2; R^6 = 4-Pyr;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
133	G = Q-2; R^6 = 4-Pyr;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
134	G = Q-2; R^6 = 2-Th;	R^5 =	Me	Et	*n*-Pr
135	G = Q-2; R^6 = 2-Th;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
136	G = Q-2; R^6 = 2-Th;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
137	G = Q-2; R^6 = 2-Th;	R^5 =	*c*-Pen	Bn	$CH_2CH=CH_2$
138	G = Q-2; R^6 = 2-Th;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
139	G = Q-2; R^6 = 2-Th;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
140	G = Q-2; R^6 = 2-Th;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
141	G = Q-2; R^6 = 2-Th;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
142	G = Q-2; R^6 = 2-Th;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
143	G = Q-2; R^6 = 2-Th;	R^5 =	OH	OMe	OEt
144	G = Q-2; R^6 = 2-Th;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
145	G = Q-2; R^6 = 2-Th;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
146	G = Q-2; R^6 = 2-Th;	R^5 =	COMe	COEt	$COCF_3$
147	G = Q-2; R^6 = 2-Th;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
148	G = Q-2; R^6 = 2-Th;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
149	G = Q-2; R^6 = 2-Th;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
150	G = Q-2; R^6 = 2-Th;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
151	G = Q-2; R^6 = 2-Th;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
152	G = Q-2; R^6 = 2-Th;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
153	G = Q-3; R^6 = 2-Pyr;	R^5 =	Me	Et	*n*-Pr
154	G = Q-3; R^6 = 2-Pyr;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
155	G = Q-3; R^6 = 2-Pyr;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
156	G = Q-3; R^6 = 2-Pyr;	R^5 =	*c*-Pen	Bn	$CH_2CH=CH_2$
157	G = Q-3; R^6 = 2-Pyr;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
158	G = Q-3; R^6 = 2-Pyr;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
159	G = Q-3; R^6 = 2-Pyr;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
160	G = Q-3; R^6 = 2-Pyr;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
161	G = Q-3; R^6 = 2-Pyr;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
162	G = Q-3; R^6 = 2-Pyr;	R^5 =	OH	OMe	OEt
163	G = Q-3; R^6 = 2-Pyr;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
164	G = Q-3; R^6 = 2-Pyr;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
165	G = Q-3; R^6 = 2-Pyr;	R^5 =	COMe	COEt	$COCF_3$
166	G = Q-3; R^6 = 2-Pyr;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
167	G = Q-3; R^6 = 2-Pyr;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
168	G = Q-3; R^6 = 2-Pyr;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
169	G = Q-3; R^6 = 2-Pyr;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$

170	G = Q-3; R^6 = 2-Pyr;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
171	G = Q-3; R^6 = 2-Pyr;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
172	G = Q-3; R^6 = 3-Pyr;	R^5 =	Me	Et	*n*-Pr
173	G = Q-3; R^6 = 3-Pyr;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
174	G = Q-3; R^6 = 3-Pyr;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
175	G = Q-3; R^6 = 3-Pyr;	R^5 =	*c*-Pen	Bn	$CH_2CH=CH_2$
176	G = Q-3; R^6 = 3-Pyr;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
177	G = Q-3; R^6 = 3-Pyr;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
178	G = Q-3; R^6 = 3-Pyr;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
179	G = Q-3; R^6 = 3-Pyr;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
180	G = Q-3; R^6 = 3-Pyr;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
181	G = Q-3; R^6 = 3-Pyr;	R^5 =	OH	OMe	OEt
182	G = Q-3; R^6 = 3-Pyr;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
183	G = Q-3; R^6 = 3-Pyr;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
184	G = Q-3; R^6 = 3-Pyr;	R^5 =	COMe	COEt	$COCF_3$
185	G = Q-3; R^6 = 3-Pyr;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
186	G = Q-3; R^6 = 3-Pyr;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
187	G = Q-3; R^6 = 3-Pyr;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
188	G = Q-3; R^6 = 3-Pyr;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
189	G = Q-3; R^6 = 3-Pyr;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
190	G = Q-3; R^6 = 3-Pyr;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
191	G = Q-3; R^6 = 4-Pyr;	R^5 =	Me	Et	*n*-Pr
192	G = Q-3; R^6 = 4-Pyr;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
193	G = Q-3; R^6 = 4-Pyr;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
194	G = Q-3; R^6 = 4-Pyr;	R^5 =	*c*-Pen	Bn	$CH_2CH=CH_2$
195	G = Q-3; R^6 = 4-Pyr;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
196	G = Q-3; R^6 = 4-Pyr;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
197	G = Q-3; R^6 = 4-Pyr;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
198	G = Q-3; R^6 = 4-Pyr;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
199	G = Q-3; R^6 = 4-Pyr;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
200	G = Q-3; R^6 = 4-Pyr;	R^5 =	OH	OMe	OEt
201	G = Q-3; R^6 = 4-Pyr;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
202	G = Q-3; R^6 = 4-Pyr;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
203	G = Q-3; R^6 = 4-Pyr;	R^5 =	COMe	COEt	$COCF_3$
204	G = Q-3; R^6 = 4-Pyr;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
205	G = Q-3; R^6 = 4-Pyr;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
206	G = Q-3; R^6 = 4-Pyr;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
207	G = Q-3; R^6 = 4-Pyr;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
208	G = Q-3; R^6 = 4-Pyr;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
209	G = Q-3; R^6 = 4-Pyr;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph

210	G = Q-3; R^6 = 2-Th;	R^5 =	Me	Et	*n*-Pr
211	G = Q-3; R^6 = 2-Th;	R^5 =	*i*-Pr	*c*-Pr	*n*-Bu
212	G = Q-3; R^6 = 2-Th;	R^5 =	*i*-Bu	*t*-Bu	*n*-Hex
213	G = Q-3; R^6 = 2-Th;	R^5 =	*c*-Pen	Bn	$CH_2CH=CH_2$
214	G = Q-3; R^6 = 2-Th;	R^5 =	$CH_2CCl=CH_2$	$CH_2C\equiv CH$	CH_2-*c*-Pr
215	G = Q-3; R^6 = 2-Th;	R^5 =	CH_2CN	CH_2CONH_2	$CH_2CONHMe$
216	G = Q-3; R^6 = 2-Th;	R^5 =	CH_2CONMe_2	CH_2OMe	CH_2OBn
217	G = Q-3; R^6 = 2-Th;	R^5 =	CH_2SMe	$CH_2S(O)Me$	CH_2SO_2Me
218	G = Q-3; R^6 = 2-Th;	R^5 =	$(CH_2)_2OH$	$(CH_2)_2OMe$	$(CH_2)_2CF=CF_2$
219	G = Q-3; R^6 = 2-Th;	R^5 =	OH	OMe	OEt
220	G = Q-3; R^6 = 2-Th;	R^5 =	OBn	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
221	G = Q-3; R^6 = 2-Th;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
222	G = Q-3; R^6 = 2-Th;	R^5 =	COMe	COEt	$COCF_3$
223	G = Q-3; R^6 = 2-Th;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
224	G = Q-3; R^6 = 2-Th;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
225	G = Q-3; R^6 = 2-Th;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
226	G = Q-3; R^6 = 2-Th;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
227	G = Q-3; R^6 = 2-Th;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
228	G = Q-3; R^6 = 2-Th;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph

TABLE 4

			COLUMN			
			1	2	3	4
1	G = Q-1; R^5 = Me;	R^{17} =	2-F	3-F	4-F	2-Cl
2	G = Q-1; R^5 = Me;	R^{17} =	3-Cl	4-Cl	3-Br	4-Br
3	G = Q-1; R^5 = Me;	R^{17} =	3-I	4-I	3-Me	4-Me
4	G = Q-1; R^5 = Me;	R^{17} =	4-Et	4-*n*-Pr	4-*i*-Pr	4-*n*-Bu
5	G = Q-1; R^5 = Me;	R^{17} =	4-*t*-Bu	2,4-diCl	2,6-diCl	3,4-diCl
6	G = Q-1; R^5 = Me;	R^{17} =	3-CF_3	4-CF_3	3-CN	4-CN
7	G = Q-1; R^5 = Me;	R^{17} =	3-NO_2	4-NO_2	3-OH	4-OH
8	G = Q-1; R^5 = Me;	R^{17} =	3-OMe	4-OMe	4-OEt	4-O-*t*-Bu
9	G = Q-1; R^5 = Me;	R^{17} =	3-SMe	4-SMe	3-OCF_3	4-OCF_3
10	G = Q-1; R^5 = Me;	R^{17} =	3-S(O)Me	4-S(O)Me	3-SO_2Me	4-SO_2Me
11	G = Q-1; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	2-F	3-F	4-F	2-Cl
12	G = Q-1; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-Cl	4-Cl	3-Br	4-Br
13	G = Q-1; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-I	4-I	3-Me	4-Me
14	G = Q-1; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	4-Et	4-*n*-Pr	4-*i*-Pr	4-*n*-Bu
15	G = Q-1; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	4-*t*-Bu	2,4-diCl	2,6-diCl	3,4-diCl
16	G = Q-1; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-CF_3	4-CF_3	3-CN	4-CN
17	G = Q-1; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-NO_2	4-NO_2	3-OH	4-OH

18	G = Q-1; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-OMe	4-OMe	4-OEt	4-O-*t*-Bu
19	G = Q-1; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-SMe	4-SMe	3-OCF_3	4-OCF_3
20	G = Q-1; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-S(O)Me	4-S(O)Me	3-SO_2Me	4-SO_2Me
21	G = Q-1; R^5 = CO_2Me;	R^{17} =	2-F	3-F	4-F	2-Cl
22	G = Q-1; R^5 = CO_2Me;	R^{17} =	3-Cl	4-Cl	3-Br	4-Br
23	G = Q-1; R^5 = CO_2Me;	R^{17} =	3-I	4-I	3-Me	4-Me
24	G = Q-1; R^5 = CO_2Me;	R^{17} =	4-Et	4-*n*-Pr	4-*i*-Pr	4-*n*-Bu
25	G = Q-1; R^5 = CO_2Me;	R^{17} =	4-*t*-Bu	2,4-diCl	2,6-diCl	3,4-diCl
26	G = Q-1; R^5 = CO_2Me;	R^{17} =	3-CF_3	4-CF_3	3-CN	4-CN
27	G = Q-1; R^5 = CO_2Me;	R^{17} =	3-NO_2	4-NO_2	3-OH	4-OH
28	G = Q-1; R^5 = CO_2Me;	R^{17} =	3-OMe	4-OMe	4-OEt	4-O-*t*-Bu
29	G = Q-1; R^5 = CO_2Me;	R^{17} =	3-SMe	4-SMe	3-OCF_3	4-OCF_3
30	G = Q-1; R^5 = CO_2Me;	R^{17} =	3-S(O)Me	4-S(O)Me	3-SO_2Me	4-SO_2Me
31	G = Q-2; R^5 = Me;	R^{17} =	2-F	3-F	4-F	2-Cl
32	G = Q-2; R^5 = Me;	R^{17} =	3-Cl	4-Cl	3-Br	4-Br
33	G = Q-2; R^5 = Me;	R^{17} =	3-I	4-I	3-Me	4-Me
34	G = Q-2; R^5 = Me;	R^{17} =	4-Et	4-*n*-Pr	4-*i*-Pr	4-*n*-Bu
35	G = Q-2; R^5 = Me;	R^{17} =	4-*t*-Bu	2,4-diCl	2,6-diCl	3,4-diCl
36	G = Q-2; R^5 = Me;	R^{17} =	3-CF_3	4-CF_3	3-CN	4-CN
37	G = Q-2; R^5 = Me;	R^{17} =	3-NO_2	4-NO_2	3-OH	4-OH
38	G = Q-2; R^5 = Me;	R^{17} =	3-OMe	4-OMe	4-OEt	4-O-*t*-Bu
39	G = Q-2; R^5 = Me;	R^{17} =	3-SMe	4-SMe	3-OCF_3	4-OCF_3
40	G = Q-2; R^5 = Me;	R^{17} =	3-S(O)Me	4-S(O)Me	3-SO_2Me	4-SO_2Me
41	G = Q-2; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	2-F	3-F	4-F	2-Cl
42	G = Q-2; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-Cl	4-Cl	3-Br	4-Br
43	G = Q-2; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-I	4-I	3-Me	4-Me
44	G = Q-2; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	4-Et	4-*n*-Pr	4-*i*-Pr	4-*n*-Bu
45	G = Q-2; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	4-*t*-Bu	2,4-diCl	2,6-diCl	3,4-diCl
46	G = Q-2; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-CF_3	4-CF_3	3-CN	4-CN
47	G = Q-2; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-NO_2	4-NO_2	3-OH	4-OH
48	G = Q-2; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-OMe	4-OMe	4-OEt	4-O-*t*-Bu
49	G = Q-2; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-SMe	4-SMe	3-OCF_3	4-OCF_3
50	G = Q-2; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-S(O)Me	4-S(O)Me	3-SO_2Me	4-SO_2Me
51	G = Q-2; R^5 = CO_2Me;	R^{17} =	2-F	3-F	4-F	2-Cl
52	G = Q-2; R^5 = CO_2Me;	R^{17} =	3-Cl	4-Cl	3-Br	4-Br
53	G = Q-2; R^5 = CO_2Me;	R^{17} =	3-I	4-I	3-Me	4-Me
54	G = Q-2; R^5 = CO_2Me;	R^{17} =	4-Et	4-*n*-Pr	4-*i*-Pr	4-*n*-Bu
55	G = Q-2; R^5 = CO_2Me;	R^{17} =	4-*t*-Bu	2,4-diCl	2,6-diCl	3,4-diCl
56	G = Q-2; R^5 = CO_2Me;	R^{17} =	3-CF_3	4-CF_3	3-CN	4-CN
57	G = Q-2; R^5 = CO_2Me;	R^{17} =	3-NO_2	4-NO_2	3-OH	4-OH

58	G = Q-2; R^5 = CO_2Me;	R^{17} =	3-OMe	4-OMe	4-OEt	4-O-*t*-Bu
59	G = Q-2; R^5 = CO_2Me;	R^{17} =	3-SMe	4-SMe	3-OCF_3	4-OCF_3
60	G = Q-2; R^5 = CO_2Me;	R^{17} =	3-S(O)Me	4-S(O)Me	3-SO_2Me	4-SO_2Me
61	G = Q-3; R^5 = Me;	R^{17} =	2-F	3-F	4-F	2-Cl
62	G = Q-3; R^5 = Me;	R^{17} =	3-Cl	4-Cl	3-Br	4-Br
63	G = Q-3; R^5 = Me;	R^{17} =	3-I	4-I	3-Me	4-Me
64	G = Q-3; R^5 = Me;	R^{17} =	4-Et	4-*n*-Pr	4-*i*-Pr	4-*n*-Bu
65	G = Q-3; R^5 = Me;	R^{17} =	4-*t*-Bu	2,4-diCl	2,6-diCl	3,4-diCl
66	G = Q-3; R^5 = Me;	R^{17} =	3-CF_3	4-CF_3	3-CN	4-CN
67	G = Q-3; R^5 = Me;	R^{17} =	3-NO_2	4-NO_2	3-OH	4-OH
68	G = Q-3; R^5 = Me;	R^{17} =	3-OMe	4-OMe	4-OEt	4-O-*t*-Bu
69	G = Q-3; R^5 = Me;	R^{17} =	3-SMe	4-SMe	3-OCF_3	4-OCF_3
70	G = Q-3; R^5 = Me;	R^{17} =	3-S(O)Me	4-S(O)Me	3-SO_2Me	4-SO_2Me
71	G = Q-3; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	2-F	3-F	4-F	2-Cl
72	G = Q-3; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-Cl	4-Cl	3-Br	4-Br
73	G = Q-3; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-I	4-I	3-Me	4-Me
74	G = Q-3; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	4-Et	4-*n*-Pr	4-*i*-Pr	4-*n*-Bu
75	G = Q-3; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	4-*t*-Bu	2,4-diCl	2,6-diCl	3,4-diCl
76	G = Q-3; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-CF_3	4-CF_3	3-CN	4-CN
77	G = Q-3; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-NO_2	4-NO_2	3-OH	4-OH
78	G = Q-3; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-OMe	4-OMe	4-OEt	4-O-*t*-Bu
79	G = Q-3; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-SMe	4-SMe	3-OCF_3	4-OCF_3
80	G = Q-3; R^5 = $(CH_2)_2CF=CF_2$;	R^{17} =	3-S(O)Me	4-S(O)Me	3-SO_2Me	4-SO_2Me
81	G = Q-3; R^5 = CO_2Me;	R^{17} =	2-F	3-F	4-F	2-Cl
82	G = Q-3; R^5 = CO_2Me;	R^{17} =	3-Cl	4-Cl	3-Br	4-Br
83	G = Q-3; R^5 = CO_2Me;	R^{17} =	3-I	4-I	3-Me	4-Me
84	G = Q-3; R^5 = CO_2Me;	R^{17} =	4-Et	4-*n*-Pr	4-*i*-Pr	4-*n*-Bu
85	G = Q-3; R^5 = CO_2Me;	R^{17} =	4-*t*-Bu	2,4-diCl	2,6-diCl	3,4-diCl
86	G = Q-3; R^5 = CO_2Me;	R^{17} =	3-CF_3	4-CF_3	3-CN	4-CN
87	G = Q-3; R^5 = CO_2Me;	R^{17} =	3-NO_2	4-NO_2	3-OH	4-OH
88	G = Q-3; R^5 = CO_2Me;	R^{17} =	3-OMe	4-OMe	4-OEt	4-O-*t*-Bu
89	G = Q-3; R^5 = CO_2Me;	R^{17} =	3-SMe	4-SMe	3-OCF_3	4-OCF_3
90	G = Q-3; R^5 = CO_2Me;	R^{17} =	3-S(O)Me	4-S(O)Me	3-SO_2Me	4-SO_2Me

TABLE 5

(R^2 = Et)

			COLUMN		
			1	2	3
1	R^3 = Br; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
2	R^3 = Br; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
3	R^3 = Br; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me

4	R^3 = Br; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
5	R^3 = Br; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
6	R^3 = Br; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
7	R^3 = Br; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
8	R^3 = Br; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
9	R^3 = Br; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
10	R^3 = Br; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
11	R^3 = Br; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
12	R^3 = Br; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
13	R^3 = Br; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
14	R^3 = Br; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
15	R^3 = Br; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
16	R^3 = Br; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
17	R^3 = Me; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
18	R^3 = Me; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
19	R^3 = Me; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
20	R^3 = Me; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
21	R^3 = Me; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
22	R^3 = Me; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
23	R^3 = Me; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
24	R^3 = Me; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
25	R^3 = Me; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
26	R^3 = Me; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
27	R^3 = Me; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
28	R^3 = Me; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
29	R^3 = Me; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
30	R^3 = Me; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
31	R^3 = Me; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
32	R^3 = Me; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
33	R^3 = OMe; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
34	R^3 = OMe; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
35	R^3 = OMe; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
36	R^3 = OMe; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
37	R^3 = OMe; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
38	R^3 = OMe; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
39	R^3 = OMe; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
40	R^3 = OMe; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
41	R^3 = OMe; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
42	R^3 = OMe; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
43	R^3 = OMe; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me

44	R^3 = OMe; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
45	R^3 = OMe; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
46	R^3 = OMe; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
47	R^3 = OMe; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
48	R^3 = OMe; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
49	R^3 = SMe; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
50	R^3 = SMe; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
51	R^3 = SMe; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
52	R^3 = SMe; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
53	R^3 = SMe; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
54	R^3 = SMe; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
55	R^3 = SMe; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
56	R^3 = SMe; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
57	R^3 = SMe; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
58	R^3 = SMe; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
59	R^3 = SMe; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
60	R^3 = SMe; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
61	R^3 = SMe; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
62	R^3 = SMe; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
63	R^3 = SMe; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
64	R^3 = SMe; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
65	R^3 = CN; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
66	R^3 = CN; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
67	R^3 = CN; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
68	R^3 = CN; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
69	R^3 = CN; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
70	R^3 = CN; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
71	R^3 = CN; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
72	R^3 = CN; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
73	R^3 = CN; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
74	R^3 = CN; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
75	R^3 = CN; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
76	R^3 = CN; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
77	R^3 = CN; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
78	R^3 = CN; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
79	R^3 = CN; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
80	R^3 = CN; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me

TABLE 6

($R^2 = CH_2OMe$)

			COLUMN 1	COLUMN 2	COLUMN 3
1	R^3 = Br; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
2	R^3 = Br; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
3	R^3 = Br; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
4	R^3 = Br; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
5	R^3 = Br; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
6	R^3 = Br; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
7	R^3 = Br; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
8	R^3 = Br; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
9	R^3 = Br; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
10	R^3 = Br; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
11	R^3 = Br; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
12	R^3 = Br; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
13	R^3 = Br; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
14	R^3 = Br; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
15	R^3 = Br; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
16	R^3 = Br; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
17	R^3 = Me; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
18	R^3 = Me; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
19	R^3 = Me; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
20	R^3 = Me; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
21	R^3 = Me; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
22	R^3 = Me; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
23	R^3 = Me; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
24	R^3 = Me; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
25	R^3 = Me; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
26	R^3 = Me; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
27	R^3 = Me; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
28	R^3 = Me; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
29	R^3 = Me; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
30	R^3 = Me; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
31	R^3 = Me; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
32	R^3 = Me; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
33	R^3 = SMe; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
34	R^3 = SMe; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
35	R^3 = SMe; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
36	R^3 = SMe; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
37	R^3 = SMe; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe

38	R^3 = SMe; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
39	R^3 = SMe; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
40	R^3 = SMe; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
41	R^3 = SMe; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
42	R^3 = SMe; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
43	R^3 = SMe; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
44	R^3 = SMe; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
45	R^3 = SMe; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
46	R^3 = SMe; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
47	R^3 = SMe; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
48	R^3 = SMe; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
49	R^3 = CN; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
50	R^3 = CN; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
51	R^3 = CN; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
52	R^3 = CN; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
53	R^3 = CN; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
54	R^3 = CN; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
55	R^3 = CN; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
56	R^3 = CN; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
57	R^3 = CN; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
58	R^3 = CN; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
59	R^3 = CN; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
60	R^3 = CN; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
61	R^3 = CN; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
62	R^3 = CN; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
63	R^3 = CN; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
64	R^3 = CN; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me

TABLE 7

(R^2 = Me)

			COLUMN		
			1	2	3
1	R^3 = Cl; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
2	R^3 = Cl; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
3	R^3 = Cl; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
4	R^3 = Cl; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
5	R^3 = Cl; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
6	R^3 = Cl; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
7	R^3 = Cl; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
8	R^3 = Cl; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
9	R^3 = Cl; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe

10	R^3 = Cl; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
11	R^3 = Cl; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
12	R^3 = Cl; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
13	R^3 = Br; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
14	R^3 = Br; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
15	R^3 = Br; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
16	R^3 = Br; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
17	R^3 = Br; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
18	R^3 = Br; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
19	R^3 = Br; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
20	R^3 = Br; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
21	R^3 = Br; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
22	R^3 = Br; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
23	R^3 = Br; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
24	R^3 = Br; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
25	R^3 = Me; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
26	R^3 = Me; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
27	R^3 = Me; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
28	R^3 = Me; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
29	R^3 = Me; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
30	R^3 = Me; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
31	R^3 = Me; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
32	R^3 = Me; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
33	R^3 = Me; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
34	R^3 = Me; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
35	R^3 = Me; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
36	R^3 = Me; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
37	R^3 = OMe; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
38	R^3 = OMe; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
39	R^3 = OMe; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
40	R^3 = OMe; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
41	R^3 = OMe; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
42	R^3 = OMe; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
43	R^3 = OMe; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
44	R^3 = OMe; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
45	R^3 = OMe; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
46	R^3 = OMe; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
47	R^3 = OMe; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
48	R^3 = OMe; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me

TABLE 8

(R^2 = *c*-Pr)

			COLUMN 1	COLUMN 2	COLUMN 3
1	R^3 = Cl; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
2	R^3 = Cl; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
3	R^3 = Cl; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
4	R^3 = Cl; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
5	R^3 = Cl; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
6	R^3 = Cl; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
7	R^3 = Cl; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
8	R^3 = Cl; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
9	R^3 = Cl; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
10	R^3 = Cl; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
11	R^3 = Cl; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
12	R^3 = Cl; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
13	R^3 = Br; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
14	R^3 = Br; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
15	R^3 = Br; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
16	R^3 = Br; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
17	R^3 = Br; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
18	R^3 = Br; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
19	R^3 = Br; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
20	R^3 = Br; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
21	R^3 = Br; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
22	R^3 = Br; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
23	R^3 = Br; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
24	R^3 = Br; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
25	R^3 = Me; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
26	R^3 = Me; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
27	R^3 = Me; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
28	R^3 = Me; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
29	R^3 = Me; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
30	R^3 = Me; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
31	R^3 = Me; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
32	R^3 = Me; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
33	R^3 = Me; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
34	R^3 = Me; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
35	R^3 = Me; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
36	R^3 = Me; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me

37	R^3 = OMe; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
38	R^3 = OMe; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
39	R^3 = OMe; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
40	R^3 = OMe; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
41	R^3 = OMe; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
42	R^3 = OMe; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
43	R^3 = OMe; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
44	R^3 = OMe; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
45	R^3 = OMe; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
46	R^3 = OMe; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
47	R^3 = OMe; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
48	R^3 = OMe; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me

TABLE 9

(X = O)

			COLUMN		
			1	2	3
1	G = Q-1; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
2	G = Q-1; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
3	G = Q-1; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
4	G = Q-1; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
5	G = Q-1; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
6	G = Q-1; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
7	G = Q-1; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
8	G = Q-1; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
9	G = Q-1; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
10	G = Q-1; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
11	G = Q-1; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
12	G = Q-1; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
13	G = Q-2; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
14	G = Q-2; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
15	G = Q-2; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
16	G = Q-2; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
17	G = Q-2; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
18	G = Q-2; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
19	G = Q-2; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
20	G = Q-2; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
21	G = Q-2; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
22	G = Q-2; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
23	G = Q-2; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
24	G = Q-2; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me

25	G = Q-3; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
26	G = Q-3; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
27	G = Q-3; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
28	G = Q-3; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
29	G = Q-3; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
30	G = Q-3; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
31	G = Q-3; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
32	G = Q-3; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
33	G = Q-3; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
34	G = Q-3; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
35	G = Q-3; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
36	G = Q-3; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
37	G = Q-4; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
38	G = Q-4; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
39	G = Q-4; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
40	G = Q-4; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
41	G = Q-4; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
42	G = Q-4; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
43	G = Q-4; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
44	G = Q-4; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
45	G = Q-4; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
46	G = Q-4; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
47	G = Q-4; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
48	G = Q-4; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me

TABLE 10

			COLUMN		
	(X = S)		1	2	3
1	G = Q-1; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
2	G = Q-1; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
3	G = Q-1; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
4	G = Q-1; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
5	G = Q-1; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
6	G = Q-1; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
7	G = Q-1; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
8	G = Q-1; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
9	G = Q-1; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
10	G = Q-1; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
11	G = Q-1; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
12	G = Q-1; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me

13	G = Q-2; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
14	G = Q-2; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
15	G = Q-2; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
16	G = Q-2; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
17	G = Q-2; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
18	G = Q-2; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
19	G = Q-2; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
20	G = Q-2; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
21	G = Q-2; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
22	G = Q-2; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
23	G = Q-2; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
24	G = Q-2; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
25	G = Q-3; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
26	G = Q-3; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
27	G = Q-3; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
28	G = Q-3; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
29	G = Q-3; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
30	G = Q-3; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
31	G = Q-3; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
32	G = Q-3; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
33	G = Q-3; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
34	G = Q-3; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
35	G = Q-3; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
36	G = Q-3; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
37	G = Q-4; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
38	G = Q-4; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
39	G = Q-4; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
40	G = Q-4; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
41	G = Q-4; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
42	G = Q-4; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
43	G = Q-4; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
44	G = Q-4; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
45	G = Q-4; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
46	G = Q-4; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
47	G = Q-4; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
48	G = Q-4; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me

TABLE 11

	(X = NH)		COLUMN 1	COLUMN 2	COLUMN 3
1	G = Q-5; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
2	G = Q-5; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
3	G = Q-5; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
4	G = Q-5; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
5	G = Q-5; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
6	G = Q-5; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
7	G = Q-5; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
8	G = Q-5; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
9	G = Q-5; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
10	G = Q-5; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
11	G = Q-5; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
12	G = Q-5; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
13	G = Q-5; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
14	G = Q-5; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
15	G = Q-5; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
16	G = Q-5; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
17	G = Q-6; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
18	G = Q-6; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
19	G = Q-6; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
20	G = Q-6; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
21	G = Q-6; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
22	G = Q-6; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
23	G = Q-6; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
24	G = Q-6; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
25	G = Q-6; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
26	G = Q-6; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
27	G = Q-6; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
28	G = Q-6; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
29	G = Q-6; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
30	G = Q-6; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
31	G = Q-6; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
32	G = Q-6; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
33	G = Q-7; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
34	G = Q-7; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
35	G = Q-7; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
36	G = Q-7; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
37	G = Q-7; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe

38	G = Q-7; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
39	G = Q-7; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
40	G = Q-7; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
41	G = Q-7; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
42	G = Q-7; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
43	G = Q-7; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
44	G = Q-7; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
45	G = Q-7; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
46	G = Q-7; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
47	G = Q-7; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
48	G = Q-7; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
49	G = Q-8; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
50	G = Q-8; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
51	G = Q-8; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
52	G = Q-8; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
53	G = Q-8; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
54	G = Q-8; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
55	G = Q-8; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
56	G = Q-8; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
57	G = Q-8; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
58	G = Q-8; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
59	G = Q-8; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
60	G = Q-8; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
61	G = Q-8; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
62	G = Q-8; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
63	G = Q-8; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
64	G = Q-8; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
65	G = Q-9; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
66	G = Q-9; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
67	G = Q-9; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
68	G = Q-9; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
69	G = Q-9; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
70	G = Q-9; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
71	G = Q-9; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
72	G = Q-9; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
73	G = Q-9; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
74	G = Q-9; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
75	G = Q-9; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
76	G = Q-9; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
77	G = Q-9; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe

78	G = Q-9; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
79	G = Q-9; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
80	G = Q-9; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
81	G = Q-10; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
82	G = Q-10; R^6 = Me;	R^5 =	*t*-Bu	*c*-Hex	Bn
83	G = Q-10; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
84	G = Q-10; R^6 = Me;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
85	G = Q-10; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
86	G = Q-10; R^6 = Me;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
87	G = Q-10; R^6 = Me;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
88	G = Q-10; R^6 = Me;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me
89	G = Q-10; R^6 = Ph;	R^5 =	Me	Et	*i*-Pr
90	G = Q-10; R^6 = Ph;	R^5 =	*c*-Pr	*c*-Pen	Bn
91	G = Q-10; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	CH_2SO_2Me
92	G = Q-10; R^6 = Ph;	R^5 =	OH	OMe	$(CH_2)_2CF=CF_2$
93	G = Q-10; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
94	G = Q-10; R^6 = Ph;	R^5 =	CO-*t*-Bu	CH_2CO_2Me	CO_2Me
95	G = Q-10; R^6 = Ph;	R^5 =	CO_2-*t*-Bu	$CONMe_2$	SO_2Me
96	G = Q-10; R^6 = Ph;	R^5 =	SO_2CF_3	$P(O)(OMe)_2$	P(O)(OMe)Me

TABLE 12

(X = O)

			COLUMN		
			1	2	3
1	G = Q-5; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
2	G = Q-5; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
3	G = Q-5; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
4	G = Q-5; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
5	G = Q-5; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
6	G = Q-5; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
7	G = Q-5; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
8	G = Q-5; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
9	G = Q-5; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
10	G = Q-5; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
11	G = Q-5; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
12	G = Q-5; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
13	G = Q-6; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
14	G = Q-6; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
15	G = Q-6; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
16	G = Q-6; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
17	G = Q-6; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu

18	G = Q-6; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
19	G = Q-6; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
20	G = Q-6; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
21	G = Q-6; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
22	G = Q-6; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
23	G = Q-6; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
24	G = Q-6; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
25	G = Q-7; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
26	G = Q-7; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
27	G = Q-7; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
28	G = Q-7; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
29	G = Q-7; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
30	G = Q-7; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
31	G = Q-7; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
32	G = Q-7; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
33	G = Q-7; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
34	G = Q-7; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
35	G = Q-7; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
36	G = Q-7; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
37	G = Q-8; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
38	G = Q-8; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
39	G = Q-8; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
40	G = Q-8; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
41	G = Q-8; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
42	G = Q-8; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
43	G = Q-8; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
44	G = Q-8; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
45	G = Q-8; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
46	G = Q-8; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
47	G = Q-8; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
48	G = Q-8; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
49	G = Q-9; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
50	G = Q-9; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
51	G = Q-9; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
52	G = Q-9; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
53	G = Q-9; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
54	G = Q-9; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
55	G = Q-9; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
56	G = Q-9; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
57	G = Q-9; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe

58	G = Q-9; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
59	G = Q-9; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
60	G = Q-9; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
61	G = Q-10; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
62	G = Q-10; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
63	G = Q-10; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
64	G = Q-10; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
65	G = Q-10; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
66	G = Q-10; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
67	G = Q-10; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
68	G = Q-10; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
69	G = Q-10; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
70	G = Q-10; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
71	G = Q-10; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
72	G = Q-10; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me

TABLE 13

(X = S)

			COLUMN		
			1	2	3
1	G = Q-5; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
2	G = Q-5; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
3	G = Q-5; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
4	G = Q-5; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
5	G = Q-5; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
6	G = Q-5; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
7	G = Q-5; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
8	G = Q-5; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
9	G = Q-5; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
10	G = Q-5; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
11	G = Q-5; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
12	G = Q-5; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
13	G = Q-6; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
14	G = Q-6; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
15	G = Q-6; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
16	G = Q-6; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
17	G = Q-6; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
18	G = Q-6; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
19	G = Q-6; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
20	G = Q-6; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
21	G = Q-6; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe

22	G = Q-6; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
23	G = Q-6; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
24	G = Q-6; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
25	G = Q-7; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
26	G = Q-7; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
27	G = Q-7; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
28	G = Q-7; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
29	G = Q-7; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
30	G = Q-7; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
31	G = Q-7; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
32	G = Q-7; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
33	G = Q-7; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
34	G = Q-7; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
35	G = Q-7; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
36	G = Q-7; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
37	G = Q-8; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
38	G = Q-8; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
39	G = Q-8; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
40	G = Q-8; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
41	G = Q-8; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
42	G = Q-8; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
43	G = Q-8; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
44	G = Q-8; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
45	G = Q-8; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
46	G = Q-8; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
47	G = Q-8; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
48	G = Q-8; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
49	G = Q-9; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
50	G = Q-9; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
51	G = Q-9; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
52	G = Q-9; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
53	G = Q-9; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
54	G = Q-9; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
55	G = Q-9; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
56	G = Q-9; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
57	G = Q-9; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
58	G = Q-9; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
59	G = Q-9; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
60	G = Q-9; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
61	G = Q-10; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr

62	G = Q-10; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
63	G = Q-10; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
64	G = Q-10; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
65	G = Q-10; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
66	G = Q-10; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
67	G = Q-10; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
68	G = Q-10; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
69	G = Q-10; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
70	G = Q-10; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
71	G = Q-10; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
72	G = Q-10; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me

TABLE 14

	(X = NH)		COLUMN		
			1	2	3
1	G = Q-11; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
2	G = Q-11; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
3	G = Q-11; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
4	G = Q-11; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
5	G = Q-11; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
6	G = Q-11; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
7	G = Q-11; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
8	G = Q-11; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
9	G = Q-11; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
10	G = Q-11; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
11	G = Q-11; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
12	G = Q-11; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
13	G = Q-12; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
14	G = Q-12; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
15	G = Q-12; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
16	G = Q-12; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
17	G = Q-12; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
18	G = Q-12; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
19	G = Q-12; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
20	G = Q-12; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
21	G = Q-12; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
22	G = Q-12; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
23	G = Q-12; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
24	G = Q-12; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
25	G = Q-13; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr

26	G = Q-13; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
27	G = Q-13; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
28	G = Q-13; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
29	G = Q-13; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
30	G = Q-13; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
31	G = Q-13; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
32	G = Q-13; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
33	G = Q-13; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
34	G = Q-13; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
35	G = Q-13; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
36	G = Q-13; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
37	G = Q-14; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
38	G = Q-14; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
39	G = Q-14; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
40	G = Q-14; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
41	G = Q-14; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
42	G = Q-14; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
43	G = Q-14; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
44	G = Q-14; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
45	G = Q-14; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
46	G = Q-14; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
47	G = Q-14; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
48	G = Q-14; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
49	G = Q-15; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
50	G = Q-15; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
51	G = Q-15; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
52	G = Q-15; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
53	G = Q-15; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
54	G = Q-15; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
55	G = Q-15; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
56	G = Q-15; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
57	G = Q-15; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
58	G = Q-15; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
59	G = Q-15; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
60	G = Q-15; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
61	G = Q-16; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
62	G = Q-16; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
63	G = Q-16; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
64	G = Q-16; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
65	G = Q-16; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu

66	G = Q-16; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
67	G = Q-16; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
68	G = Q-16; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
69	G = Q-16; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
70	G = Q-16; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
71	G = Q-16; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
72	G = Q-16; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
73	G = Q-17; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
74	G = Q-17; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
75	G = Q-17; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
76	G = Q-17; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
77	G = Q-17; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
78	G = Q-17; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
79	G = Q-17; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
80	G = Q-17; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
81	G = Q-17; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
82	G = Q-17; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
83	G = Q-17; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
84	G = Q-17; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me

TABLE 15

(X = O)

			COLUMN		
			1	2	3
1	G = Q-11; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
2	G = Q-11; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
3	G = Q-11; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
4	G = Q-11; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
5	G = Q-11; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
6	G = Q-11; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
7	G = Q-11; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
8	G = Q-11; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
9	G = Q-11; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
10	G = Q-11; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
11	G = Q-11; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
12	G = Q-11; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
13	G = Q-12; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
14	G = Q-12; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
15	G = Q-12; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
16	G = Q-12; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
17	G = Q-12; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu

18	G = Q-12; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
19	G = Q-12; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
20	G = Q-12; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
21	G = Q-12; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
22	G = Q-12; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
23	G = Q-12; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
24	G = Q-12; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
25	G = Q-13; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
26	G = Q-13; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
27	G = Q-13; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
28	G = Q-13; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
29	G = Q-13; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
30	G = Q-13; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
31	G = Q-13; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
32	G = Q-13; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
33	G = Q-13; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
34	G = Q-13; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
35	G = Q-13; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
36	G = Q-13; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
37	G = Q-14; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
38	G = Q-14; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
39	G = Q-14; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
40	G = Q-14; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
41	G = Q-14; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
42	G = Q-14; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
43	G = Q-14; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
44	G = Q-14; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
45	G = Q-14; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
46	G = Q-14; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
47	G = Q-14; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
48	G = Q-14; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
49	G = Q-15; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
50	G = Q-15; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
51	G = Q-15; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
52	G = Q-15; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
53	G = Q-15; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
54	G = Q-15; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
55	G = Q-15; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
56	G = Q-15; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
57	G = Q-15; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe

58	G = Q-15; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
59	G = Q-15; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
60	G = Q-15; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
61	G = Q-16; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
62	G = Q-16; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
63	G = Q-16; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
64	G = Q-16; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
65	G = Q-16; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
66	G = Q-16; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
67	G = Q-16; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
68	G = Q-16; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
69	G = Q-16; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
70	G = Q-16; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
71	G = Q-16; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
72	G = Q-16; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
73	G = Q-17; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
74	G = Q-17; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
75	G = Q-17; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
76	G = Q-17; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
77	G = Q-17; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
78	G = Q-17; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
79	G = Q-17; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
80	G = Q-17; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
81	G = Q-17; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
82	G = Q-17; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
83	G = Q-17; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
84	G = Q-17; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me

TABLE 16

(X = S)

			COLUMN		
			1	2	3
1	G = Q-11; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
2	G = Q-11; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
3	G = Q-11; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
4	G = Q-11; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
5	G = Q-11; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
6	G = Q-11; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
7	G = Q-11; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
8	G = Q-11; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
9	G = Q-11; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe

10	G = Q-11; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
11	G = Q-11; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
12	G = Q-11; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
13	G = Q-12; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
14	G = Q-12; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
15	G = Q-12; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
16	G = Q-12; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
17	G = Q-12; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
18	G = Q-12; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
19	G = Q-12; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
20	G = Q-12; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
21	G = Q-12; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
22	G = Q-12; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
23	G = Q-12; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
24	G = Q-12; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
25	G = Q-13; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
26	G = Q-13; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
27	G = Q-13; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
28	G = Q-13; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
29	G = Q-13; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
30	G = Q-13; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
31	G = Q-13; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
32	G = Q-13; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
33	G = Q-13; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
34	G = Q-13; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
35	G = Q-13; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
36	G = Q-13; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
37	G = Q-14; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
38	G = Q-14; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
39	G = Q-14; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
40	G = Q-14; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
41	G = Q-14; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
42	G = Q-14; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
43	G = Q-14; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
44	G = Q-14; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
45	G = Q-14; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
46	G = Q-14; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
47	G = Q-14; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
48	G = Q-14; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
49	G = Q-15; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr

50	G = Q-15; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
51	G = Q-15; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
52	G = Q-15; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
53	G = Q-15; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
54	G = Q-15; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
55	G = Q-15; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
56	G = Q-15; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
57	G = Q-15; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
58	G = Q-15; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
59	G = Q-15; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
60	G = Q-15; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
61	G = Q-16; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
62	G = Q-16; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
63	G = Q-16; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
64	G = Q-16; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
65	G = Q-16; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
66	G = Q-16; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
67	G = Q-16; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
68	G = Q-16; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
69	G = Q-16; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
70	G = Q-16; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
71	G = Q-16; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
72	G = Q-16; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
73	G = Q-17; R^6 = Me;	R^5 =	Me	*i*-Pr	*c*-Pr
74	G = Q-17; R^6 = Me;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
75	G = Q-17; R^6 = Me;	R^5 =	CH_2CO_2Me	OH	OMe
76	G = Q-17; R^6 = Me;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
77	G = Q-17; R^6 = Me;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
78	G = Q-17; R^6 = Me;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
79	G = Q-17; R^6 = Ph;	R^5 =	Me	Et	*c*-Pr
80	G = Q-17; R^6 = Ph;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
81	G = Q-17; R^6 = Ph;	R^5 =	CH_2CO_2Me	OH	OMe
82	G = Q-17; R^6 = Ph;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
83	G = Q-17; R^6 = Ph;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
84	G = Q-17; R^6 = Ph;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me

TABLE 17

			COLUMN 1	COLUMN 2	COLUMN 3
1	G = Q-1;	R^5 =	H	Me	Et
2	G = Q-1;	R^5 =	*n*-Pr	*c*-Pr	*n*-Bu
3	G = Q-1;	R^5 =	*i*-Bu	*n*-Hex	Bn
4	G = Q-1;	R^5 =	$CH_2CH=CH_2$	$CH_2CCl=CH_2$	$(CH_2)_2CF=CF_2$
5	G = Q-1;	R^5 =	$CH_2C\equiv CH$	CH_2-*c*-Pr	CH_2CN
6	G = Q-1;	R^5 =	CH_2CONH_2	$CH_2CONHMe$	CH_2CONMe_2
7	G = Q-1;	R^5 =	CH_2OMe	CH_2OBn	CH_2SMe
8	G = Q-1;	R^5 =	$CH_2S(O)Me$	CH_2SO_2Me	$(CH_2)_2OH$
9	G = Q-1;	R^5 =	$(CH_2)_2OMe$	OH	OMe
10	G = Q-1;	R^5 =	OEt	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
11	G = Q-1;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
12	G = Q-1;	R^5 =	COMe	COEt	$COCF_3$
13	G = Q-1;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
14	G = Q-1;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
15	G = Q-1;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
16	G = Q-1;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
17	G = Q-1;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
18	G = Q-1;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
19	G = Q-2;	R^5 =	H	Me	Et
20	G = Q-2;	R^5 =	*n*-Pr	*c*-Pr	*n*-Bu
21	G = Q-2;	R^5 =	*i*-Bu	*n*-Hex	Bn
22	G = Q-2;	R^5 =	$CH_2CH=CH_2$	$CH_2CCl=CH_2$	$(CH_2)_2CF=CF_2$
23	G = Q-2;	R^5 =	$CH_2C\equiv CH$	CH_2-*c*-Pr	CH_2CN
24	G = Q-2;	R^5 =	CH_2CONH_2	$CH_2CONHMe$	CH_2CONMe_2
25	G = Q-2;	R^5 =	CH_2OMe	CH_2OBn	CH_2SMe
26	G = Q-2;	R^5 =	$CH_2S(O)Me$	CH_2SO_2Me	$(CH_2)_2OH$
27	G = Q-2;	R^5 =	$(CH_2)_2OMe$	OH	OMe
28	G = Q-2;	R^5 =	OEt	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
29	G = Q-2;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
30	G = Q-2;	R^5 =	COMe	COEt	$COCF_3$
31	G = Q-2;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
32	G = Q-2;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
33	G = Q-2;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
34	G = Q-2;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
35	G = Q-2;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
36	G = Q-2;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
37	G = Q-3;	R^5 =	H	Me	Et

38	G = Q-3;	R^5 =	*n*-Pr	*c*-Pr	*n*-Bu
39	G = Q-3;	R^5 =	*i*-Bu	*n*-Hex	Bn
40	G = Q-3;	R^5 =	$CH_2CH=CH_2$	$CH_2CCl=CH_2$	$(CH_2)_2CF=CF_2$
41	G = Q-3;	R^5 =	$CH_2C\equiv CH$	CH_2-*c*-Pr	CH_2CN
42	G = Q-3;	R^5 =	CH_2CONH_2	$CH_2CONHMe$	CH_2CONMe_2
43	G = Q-3;	R^5 =	CH_2OMe	CH_2OBn	CH_2SMe
44	G = Q-3;	R^5 =	$CH_2S(O)Me$	CH_2SO_2Me	$(CH_2)_2OH$
45	G = Q-3;	R^5 =	$(CH_2)_2OMe$	OH	OMe
46	G = Q-3;	R^5 =	OEt	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
47	G = Q-3;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
48	G = Q-3;	R^5 =	COMe	COEt	$COCF_3$
49	G = Q-3;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
50	G = Q-3;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
51	G = Q-3;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
52	G = Q-3;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
53	G = Q-3;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
54	G = Q-3;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph
55	G = Q-4;	R^5 =	H	Me	Et
56	G = Q-4;	R^5 =	*n*-Pr	*c*-Pr	*n*-Bu
57	G = Q-4;	R^5 =	*i*-Bu	*n*-Hex	Bn
58	G = Q-4;	R^5 =	$CH_2CH=CH_2$	$CH_2CCl=CH_2$	$(CH_2)_2CF=CF_2$
59	G = Q-4;	R^5 =	$CH_2C\equiv CH$	CH_2-*c*-Pr	CH_2CN
60	G = Q-4;	R^5 =	CH_2CONH_2	$CH_2CONHMe$	CH_2CONMe_2
61	G = Q-4;	R^5 =	CH_2OMe	CH_2OBn	CH_2SMe
62	G = Q-4;	R^5 =	$CH_2S(O)Me$	CH_2SO_2Me	$(CH_2)_2OH$
63	G = Q-4;	R^5 =	$(CH_2)_2OMe$	OH	OMe
64	G = Q-4;	R^5 =	OEt	$OCH_2C\equiv CH$	OCH_2-*c*-Pr
65	G = Q-4;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	CHO
66	G = Q-4;	R^5 =	COMe	COEt	$COCF_3$
67	G = Q-4;	R^5 =	CO-*i*-Pr	CO-*c*-Pr	CO-*t*-Bu
68	G = Q-4;	R^5 =	COPh	CH_2CO_2Me	CO_2Me
69	G = Q-4;	R^5 =	CO_2Et	CO_2-*i*-Pr	CO_2-*t*-Bu
70	G = Q-4;	R^5 =	CO_2Bn	CONHMe	$CONMe_2$
71	G = Q-4;	R^5 =	SO_2Me	SO_2CF_3	SO_2Ph
72	G = Q-4;	R^5 =	$P(O)(OMe)_2$	P(O)(OMe)Me	Ph

TABLE 18

			COLUMN 1	COLUMN 2	COLUMN 3
1	G = Q-5;	R^5 =	H	Me	*c*-Pr
2	G = Q-5;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
3	G = Q-5;	R^5 =	CH_2CO_2Me	OH	OMe
4	G = Q-5;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
5	G = Q-5;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
6	G = Q-5;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
7	G = Q-6;	R^5 =	H	Me	*c*-Pr
8	G = Q-6;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
9	G = Q-6;	R^5 =	CH_2CO_2Me	OH	OMe
10	G = Q-6;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
11	G = Q-6;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
12	G = Q-6;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
13	G = Q-7;	R^5 =	H	Me	*c*-Pr
14	G = Q-7;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
15	G = Q-7;	R^5 =	CH_2CO_2Me	OH	OMe
16	G = Q-7;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
17	G = Q-7;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
18	G = Q-7;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
19	G = Q-8;	R^5 =	H	Me	*c*-Pr
20	G = Q-8;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
21	G = Q-8;	R^5 =	CH_2CO_2Me	OH	OMe
22	G = Q-8;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
23	G = Q-8;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
24	G = Q-8;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
25	G = Q-9;	R^5 =	H	Me	*c*-Pr
26	G = Q-9;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
27	G = Q-9;	R^5 =	CH_2CO_2Me	OH	OMe
28	G = Q-9;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
29	G = Q-9;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
30	G = Q-9;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
31	G = Q-10;	R^5 =	H	Me	*c*-Pr
32	G = Q-10;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
33	G = Q-10;	R^5 =	CH_2CO_2Me	OH	OMe
34	G = Q-10;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
35	G = Q-10;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
36	G = Q-10;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
37	G = Q-11;	R^5 =	H	Me	*c*-Pr

38	G = Q-11;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
39	G = Q-11;	R^5 =	CH_2CO_2Me	OMe	COMe
40	G = Q-11;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
41	G = Q-12;	R^5 =	H	Me	*c*-Pr
42	G = Q-12;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
43	G = Q-12;	R^5 =	CH_2CO_2Me	OMe	COMe
44	G = Q-12;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
45	G = Q-13;	R^5 =	H	Me	*c*-Pr
46	G = Q-13;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
47	G = Q-13;	R^5 =	CH_2CO_2Me	OMe	COMe
48	G = Q-13;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
49	G = Q-14;	R^5 =	H	Me	*c*-Pr
50	G = Q-14;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
51	G = Q-14;	R^5 =	CH_2CO_2Me	OMe	COMe
52	G = Q-14;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
53	G = Q-15;	R^5 =	H	Me	*c*-Pr
54	G = Q-15;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
55	G = Q-15;	R^5 =	CH_2CO_2Me	OH	OMe
56	G = Q-15;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
57	G = Q-15;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
58	G = Q-15;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
59	G = Q-16;	R^5 =	H	Me	*c*-Pr
60	G = Q-16;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
61	G = Q-16;	R^5 =	CH_2CO_2Me	OMe	COMe
62	G = Q-16;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
63	G = Q-17;	R^5 =	H	Me	*c*-Pr
64	G = Q-17;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
65	G = Q-17;	R^5 =	CH_2CO_2Me	OMe	COMe
66	G = Q-17;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me

TABLE 19

			COLUMN		
			1	2	3
1	G = Q-1; R^6 = Q-2;	R^5 =	H	Me	*c*-Pr
2	G = Q-1; R^6 = Q-2;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
3	G = Q-1; R^6 = Q-2;	R^5 =	CH_2CO_2Me	OH	OMe
4	G = Q-1; R^6 = Q-2;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
5	G = Q-1; R^6 = Q-2;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
6	G = Q-1; R^6 = Q-2;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
7	G = Q-1; R^6 = Q-3;	R^5 =	H	Me	*c*-Pr

8	G = Q-1; R^6 = Q-3;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
9	G = Q-1; R^6 = Q-3;	R^5 =	CH_2CO_2Me	OH	OMe
10	G = Q-1; R^6 = Q-3;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
11	G = Q-1; R^6 = Q-3;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
12	G = Q-1; R^6 = Q-3;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
13	G = Q-1; R^6 = Q-4;	R^5 =	H	Me	*c*-Pr
14	G = Q-1; R^6 = Q-4;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
15	G = Q-1; R^6 = Q-4;	R^5 =	CH_2CO_2Me	OH	OMe
16	G = Q-1; R^6 = Q-4;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
17	G = Q-1; R^6 = Q-4;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
18	G = Q-1; R^6 = Q-4;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
19	G = Q-1; R^6 = Q-5;	R^5 =	H	Me	*c*-Pr
20	G = Q-1; R^6 = Q-5;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
21	G = Q-1; R^6 = Q-5;	R^5 =	CH_2CO_2Me	OMe	COMe
22	G = Q-1; R^6 = Q-5;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
23	G = Q-1; R^6 = Q-6;	R^5 =	H	Me	*c*-Pr
24	G = Q-1; R^6 = Q-6;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
25	G = Q-1; R^6 = Q-6;	R^5 =	CH_2CO_2Me	OMe	COMe
26	G = Q-1; R^6 = Q-6;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
27	G = Q-1; R^6 = Q-7;	R^5 =	H	Me	*c*-Pr
28	G = Q-1; R^6 = Q-7;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
29	G = Q-1; R^6 = Q-7;	R^5 =	CH_2CO_2Me	OMe	COMe
30	G = Q-1; R^6 = Q-7;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
31	G = Q-1; R^6 = Q-8;	R^5 =	H	Me	*c*-Pr
32	G = Q-1; R^6 = Q-8;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
33	G = Q-1; R^6 = Q-8;	R^5 =	CH_2CO_2Me	OMe	COMe
34	G = Q-1; R^6 = Q-8;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
35	G = Q-1; R^6 = Q-9;	R^5 =	H	Me	*c*-Pr
36	G = Q-1; R^6 = Q-9;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
37	G = Q-1; R^6 = Q-9;	R^5 =	CH_2CO_2Me	OMe	COMe
38	G = Q-1; R^6 = Q-9;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
39	G = Q-1; R^6 = Q-10;	R^5 =	H	Me	*c*-Pr
40	G = Q-1; R^6 = Q-10;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
41	G = Q-1; R^6 = Q-10;	R^5 =	CH_2CO_2Me	OMe	COMe
42	G = Q-1; R^6 = Q-10;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
43	G = Q-1; R^6 = Q-15;	R^5 =	H	Me	*c*-Pr
44	G = Q-1; R^6 = Q-15;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
45	G = Q-1; R^6 = Q-15;	R^5 =	CH_2CO_2Me	OMe	COMe
46	G = Q-1; R^6 = Q-15;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
47	G = Q-1; R^6 = Q-16;	R^5 =	H	Me	*c*-Pr

48	G = Q-1; R^6 = Q-16;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
49	G = Q-1; R^6 = Q-16;	R^5 =	CH_2CO_2Me	OMe	COMe
50	G = Q-1; R^6 = Q-16;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
51	G = Q-1; R^6 = Q-17;	R^5 =	H	Me	*c*-Pr
52	G = Q-1; R^6 = Q-17;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
53	G = Q-1; R^6 = Q-17;	R^5 =	CH_2CO_2Me	OMe	COMe
54	G = Q-1; R^6 = Q-17;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
55	G = Q-2; R^6 = Q-1;	R^5 =	Me	Et	*c*-Pr
56	G = Q-2; R^6 = Q-1;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
57	G = Q-2; R^6 = Q-1;	R^5 =	CH_2CO_2Me	OH	OMe
58	G = Q-2; R^6 = Q-1;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
59	G = Q-2; R^6 = Q-1;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
60	G = Q-2; R^6 = Q-1;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
61	G = Q-2; R^6 = Q-3;	R^5 =	H	Me	*c*-Pr
62	G = Q-2; R^6 = Q-3;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
63	G = Q-2; R^6 = Q-3;	R^5 =	CH_2CO_2Me	OH	OMe
64	G = Q-2; R^6 = Q-3;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
65	G = Q-2; R^6 = Q-3;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
66	G = Q-2; R^6 = Q-3;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
67	G = Q-2; R^6 = Q-4;	R^5 =	H	Me	*c*-Pr
68	G = Q-2; R^6 = Q-4;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
69	G = Q-2; R^6 = Q-4;	R^5 =	CH_2CO_2Me	OH	OMe
70	G = Q-2; R^6 = Q-4;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
71	G = Q-2; R^6 = Q-4;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
72	G = Q-2; R^6 = Q-4;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
73	G = Q-2; R^6 = Q-5;	R^5 =	H	Me	*c*-Pr
74	G = Q-2; R^6 = Q-5;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
75	G = Q-2; R^6 = Q-5;	R^5 =	CH_2CO_2Me	OMe	COMe
76	G = Q-2; R^6 = Q-5;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
77	G = Q-2; R^6 = Q-6;	R^5 =	H	Me	*c*-Pr
78	G = Q-2; R^6 = Q-6;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
79	G = Q-2; R^6 = Q-6;	R^5 =	CH_2CO_2Me	OMe	COMe
80	G = Q-2; R^6 = Q-6;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
81	G = Q-2; R^6 = Q-7;	R^5 =	H	Me	*c*-Pr
82	G = Q-2; R^6 = Q-7;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
83	G = Q-2; R^6 = Q-7;	R^5 =	CH_2CO_2Me	OMe	COMe
84	G = Q-2; R^6 = Q-7;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
85	G = Q-2; R^6 = Q-8;	R^5 =	H	Me	*c*-Pr
86	G = Q-2; R^6 = Q-8;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
87	G = Q-2; R^6 = Q-8;	R^5 =	CH_2CO_2Me	OMe	COMe

88	G = Q-2; R^6 = Q-8;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
89	G = Q-2; R^6 = Q-9;	R^5 =	H	Me	*c*-Pr
90	G = Q-2; R^6 = Q-9;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
91	G = Q-2; R^6 = Q-9;	R^5 =	CH_2CO_2Me	OMe	COMe
92	G = Q-2; R^6 = Q-9;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
93	G = Q-2; R^6 = Q-10;	R^5 =	H	Me	*c*-Pr
94	G = Q-2; R^6 = Q-10;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
95	G = Q-2; R^6 = Q-10;	R^5 =	CH_2CO_2Me	OMe	COMe
96	G = Q-2; R^6 = Q-10;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
97	G = Q-2; R^6 = Q-15;	R^5 =	H	Me	*c*-Pr
98	G = Q-2; R^6 = Q-15;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
99	G = Q-2; R^6 = Q-15;	R^5 =	CH_2CO_2Me	OMe	COMe
100	G = Q-2; R^6 = Q-15;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
101	G = Q-3; R^6 = Q-1;	R^5 =	Me	Et	*c*-Pr
102	G = Q-3; R^6 = Q-1;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
103	G = Q-3; R^6 = Q-1;	R^5 =	CH_2CO_2Me	OH	OMe
104	G = Q-3; R^6 = Q-1;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
105	G = Q-3; R^6 = Q-1;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
106	G = Q-3; R^6 = Q-1;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
107	G = Q-3; R^6 = Q-2;	R^5 =	Me	Et	*c*-Pr
108	G = Q-3; R^6 = Q-2;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
109	G = Q-3; R^6 = Q-2;	R^5 =	CH_2CO_2Me	OH	OMe
110	G = Q-3; R^6 = Q-2;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
111	G = Q-3; R^6 = Q-2;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
112	G = Q-3; R^6 = Q-2;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
113	G = Q-3; R^6 = Q-4;	R^5 =	H	Me	*c*-Pr
114	G = Q-3; R^6 = Q-4;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
115	G = Q-3; R^6 = Q-4;	R^5 =	CH_2CO_2Me	OH	OMe
116	G = Q-3; R^6 = Q-4;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
117	G = Q-3; R^6 = Q-4;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
118	G = Q-3; R^6 = Q-4;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
119	G = Q-3; R^6 = Q-7;	R^5 =	H	Me	*c*-Pr
120	G = Q-3; R^6 = Q-7;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
121	G = Q-3; R^6 = Q-7;	R^5 =	CH_2CO_2Me	OMe	COMe
122	G = Q-3; R^6 = Q-7;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
123	G = Q-3; R^6 = Q-8;	R^5 =	H	Me	*c*-Pr
124	G = Q-3; R^6 = Q-8;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
125	G = Q-3; R^6 = Q-8;	R^5 =	CH_2CO_2Me	OMe	COMe
126	G = Q-3; R^6 = Q-8;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
127	G = Q-3; R^6 = Q-9;	R^5 =	H	Me	*c*-Pr

128	G = Q-3; R^6 = Q-9;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
129	G = Q-3; R^6 = Q-9;	R^5 =	CH_2CO_2Me	OMe	COMe
130	G = Q-3; R^6 = Q-9;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
131	G = Q-3; R^6 = Q-10;	R^5 =	H	Me	*c*-Pr
132	G = Q-3; R^6 = Q-10;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
133	G = Q-3; R^6 = Q-10;	R^5 =	CH_2CO_2Me	OMe	COMe
134	G = Q-3; R^6 = Q-10;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
135	G = Q-3; R^6 = Q-15;	R^5 =	H	Me	*c*-Pr
136	G = Q-3; R^6 = Q-15;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
137	G = Q-3; R^6 = Q-15;	R^5 =	CH_2CO_2Me	OMe	COMe
138	G = Q-3; R^6 = Q-15;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
139	G = Q-4; R^6 = Q-3;	R^5 =	Me	Et	*c*-Pr
140	G = Q-4; R^6 = Q-3;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
141	G = Q-4; R^6 = Q-3;	R^5 =	CH_2CO_2Me	OH	OMe
142	G = Q-4; R^6 = Q-3;	R^5 =	OCH_2CN	$O(CH_2)_2CF=CF_2$	COMe
143	G = Q-4; R^6 = Q-3;	R^5 =	CO-*t*-Bu	CO_2Me	CO_2-*t*-Bu
144	G = Q-4; R^6 = Q-3;	R^5 =	$CONMe_2$	SO_2CF_3	P(O)(OMe)Me
145	G = Q-4; R^6 = Q-7;	R^5 =	H	Me	*c*-Pr
146	G = Q-4; R^6 = Q-7;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
147	G = Q-4; R^6 = Q-7;	R^5 =	CH_2CO_2Me	OMe	COMe
148	G = Q-4; R^6 = Q-7;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
149	G = Q-4; R^6 = Q-8;	R^5 =	H	Me	*c*-Pr
150	G = Q-4; R^6 = Q-8;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
151	G = Q-4; R^6 = Q-8;	R^5 =	CH_2CO_2Me	OMe	COMe
152	G = Q-4; R^6 = Q-8;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
153	G = Q-4; R^6 = Q-9;	R^5 =	H	Me	*c*-Pr
154	G = Q-4; R^6 = Q-9;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
155	G = Q-4; R^6 = Q-9;	R^5 =	CH_2CO_2Me	OMe	COMe
156	G = Q-4; R^6 = Q-9;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
157	G = Q-4; R^6 = Q-10;	R^5 =	H	Me	*c*-Pr
158	G = Q-4; R^6 = Q-10;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
159	G = Q-4; R^6 = Q-10;	R^5 =	CH_2CO_2Me	OMe	COMe
160	G = Q-4; R^6 = Q-10;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
161	G = Q-4; R^6 = Q-15;	R^5 =	H	Me	*c*-Pr
162	G = Q-4; R^6 = Q-15;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
163	G = Q-4; R^6 = Q-15;	R^5 =	CH_2CO_2Me	OMe	COMe
164	G = Q-4; R^6 = Q-15;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
165	G = Q-6; R^6 = Q-7;	R^5 =	H	Me	*c*-Pr
166	G = Q-6; R^6 = Q-7;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
167	G = Q-6; R^6 = Q-7;	R^5 =	CH_2CO_2Me	OMe	COMe

168	G = Q-6; R^6 = Q-7;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
169	G = Q-6; R^6 = Q-8;	R^5 =	H	Me	*c*-Pr
170	G = Q-6; R^6 = Q-8;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
171	G = Q-6; R^6 = Q-8;	R^5 =	CH_2CO_2Me	OMe	COMe
172	G = Q-6; R^6 = Q-8;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
173	G = Q-6; R^6 = Q-9;	R^5 =	H	Me	*c*-Pr
174	G = Q-6; R^6 = Q-9;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
175	G = Q-6; R^6 = Q-9;	R^5 =	CH_2CO_2Me	OMe	COMe
176	G = Q-6; R^6 = Q-9;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
177	G = Q-6; R^6 = Q-10;	R^5 =	H	Me	*c*-Pr
178	G = Q-6; R^6 = Q-10;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
179	G = Q-6; R^6 = Q-10;	R^5 =	CH_2CO_2Me	OMe	COMe
180	G = Q-6; R^6 = Q-10;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
181	G = Q-6; R^6 = Q-15;	R^5 =	H	Me	*c*-Pr
182	G = Q-6; R^6 = Q-15;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
183	G = Q-6; R^6 = Q-15;	R^5 =	CH_2CO_2Me	OMe	COMe
184	G = Q-6; R^6 = Q-15;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
185	G = Q-9; R^6 = Q-7;	R^5 =	H	Me	*c*-Pr
186	G = Q-9; R^6 = Q-7;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
187	G = Q-9; R^6 = Q-7;	R^5 =	CH_2CO_2Me	OMe	COMe
188	G = Q-9; R^6 = Q-7;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
189	G = Q-9; R^6 = Q-8;	R^5 =	H	Me	*c*-Pr
190	G = Q-9; R^6 = Q-8;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
191	G = Q-9; R^6 = Q-8;	R^5 =	CH_2CO_2Me	OMe	COMe
192	G = Q-9; R^6 = Q-8;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
193	G = Q-9; R^6 = Q-10;	R^5 =	H	Me	*c*-Pr
194	G = Q-9; R^6 = Q-10;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
195	G = Q-9; R^6 = Q-10;	R^5 =	CH_2CO_2Me	OMe	COMe
196	G = Q-9; R^6 = Q-10;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me
197	G = Q-9; R^6 = Q-15;	R^5 =	H	Me	*c*-Pr
198	G = Q-9; R^6 = Q-15;	R^5 =	CH_2CN	CH_2OMe	$(CH_2)_2CF=CF_2$
199	G = Q-9; R^6 = Q-15;	R^5 =	CH_2CO_2Me	OMe	COMe
200	G = Q-9; R^6 = Q-15;	R^5 =	CO_2Me	SO_2CF_3	P(O)(OMe)Me

TABLE 20

			COLUMN			
			1	2	3	4
1	G = Q-1; X = NH;	NR^5R^6 =	Piper	Morph	Phth	Hphth
2	G = Q-2; X = NH;	NR^5R^6 =	Piper	Morph	Phth	Hphth
3	G = Q-3; X = NH;	NR^5R^6 =	Piper	Morph	Phth	Hphth

4	G = Q-4; X = NH;	NR^5R^6 =	Piper	Morph	Phth	Hphth
5	G = Q-5; X = NH;	NR^5R^6 =	Piper	Morph	Phth	Hphth
6	G = Q-6; X = NH;	NR^5R^6 =	Piper	Morph	Phth	Hphth
7	G = Q-7; X = NH;	NR^5R^6 =	Piper	Morph	Phth	Hphth
8	G = Q-9; X = NH;	NR^5R^6 =	Piper	Morph	Phth	Hphth
9	G = Q-10; X = NH;	NR^5R^6 =	Piper	Morph	Phth	Hphth
10	G = Q-15; X = NH;	NR^5R^6 =	Piper	Morph	Phth	Hphth
11	G = Q-16; X = NH;	NR^5R^6 =	Piper	Morph	Phth	Hphth
12	G = Q-17; X = NH;	NR^5R^6 =	Piper	Morph	Phth	Hphth
13	G = Q-1; X = O;	NR^5R^6 =	Piper	Morph	Phth	Hphth
14	G = Q-2; X = O;	NR^5R^6 =	Piper	Morph	Phth	Hphth
15	G = Q-3; X = O;	NR^5R^6 =	Piper	Morph	Phth	Hphth
16	G = Q-4; X = O;	NR^5R^6 =	Piper	Morph	Phth	Hphth
17	G = Q-5; X = O;	NR^5R^6 =	Piper	Morph	Phth	Hphth
18	G = Q-6; X = O;	NR^5R^6 =	Piper	Morph	Phth	Hphth
19	G = Q-7; X = O;	NR^5R^6 =	Piper	Morph	Phth	Hphth
20	G = Q-9; X = O;	NR^5R^6 =	Piper	Morph	Phth	Hphth
21	G = Q-10; X = O;	NR^5R^6 =	Piper	Morph	Phth	Hphth
22	G = Q-15; X = O;	NR^5R^6 =	Piper	Morph	Phth	Hphth
23	G = Q-16; X = O;	NR^5R^6 =	Piper	Morph	Phth	Hphth
24	G = Q-17; X = O;	NR^5R^6 =	Piper	Morph	Phth	Hphth
25	G = Q-1; X = S;	NR^5R^6 =	Piper	Morph	Phth	Hphth
26	G = Q-2; X = S;	NR^5R^6 =	Piper	Morph	Phth	Hphth
27	G = Q-3; X = S;	NR^5R^6 =	Piper	Morph	Phth	Hphth
28	G = Q-4; X = S;	NR^5R^6 =	Piper	Morph	Phth	Hphth
29	G = Q-5; X = S;	NR^5R^6 =	Piper	Morph	Phth	Hphth
30	G = Q-6; X = S;	NR^5R^6 =	Piper	Morph	Phth	Hphth
31	G = Q-7; X = S;	NR^5R^6 =	Piper	Morph	Phth	Hphth
32	G = Q-9; X = S;	NR^5R^6 =	Piper	Morph	Phth	Hphth
33	G = Q-10; X = S;	NR^5R^6 =	Piper	Morph	Phth	Hphth
34	G = Q-15; X = S;	NR^5R^6 =	Piper	Morph	Phth	Hphth
35	G = Q-16; X = S;	NR^5R^6 =	Piper	Morph	Phth	Hphth
36	G = Q-17; X = S;	NR^5R^6 =	Piper	Morph	Phth	Hphth

TABLE 21

			COLUMN			
			1	2	3	4
1	G = Q-1; X = NH;	R^{18} =	H	Me	*i*-Pr	OH
2	G = Q-1; X = NH;	R^{18} =	OMe	SMe	Ph	(2,6-diF)Ph
3	G = Q-2; X = NH;	R^{18} =	H	Me	*i*-Pr	OH

4	G = Q-2; X = NH;	R^{18} =	OMe	SMe	Ph	(2,6-diF)Ph
5	G = Q-3; X = NH;	R^{18} =	H	Me	*i*-Pr	OH
6	G = Q-3; X = NH;	R^{18} =	OMe	SMe	Ph	(2,6-diF)Ph
7	G = Q-4; X = NH;	R^{18} =	H	Me	*i*-Pr	OH
8	G = Q-4; X = NH;	R^{18} =	OMe	SMe	Ph	(2,6-diF)Ph
9	G = Q-5; X = NH;	R^{18} =	H	Me	*i*-Pr	OH
10	G = Q-5; X = NH;	R^{18} =	OMe	SMe	Ph	(2,6-diF)Ph
11	G = Q-6; X = NH;	R^{18} =	H	Me	*i*-Pr	OH
12	G = Q-6; X = NH;	R^{18} =	OMe	SMe	Ph	(2,6-diF)Ph
13	G = Q-7; X = NH;	R^{18} =	H	Me	*i*-Pr	OH
14	G = Q-7; X = NH;	R^{18} =	OMe	SMe	Ph	(2,6-diF)Ph
15	G = Q-9; X = NH;	R^{18} =	H	Me	*i*-Pr	OH
16	G = Q-9; X = NH;	R^{18} =	OMe	SMe	Ph	(2,6-diF)Ph
17	G = Q-10; X = NH;	R^{18} =	H	Me	*i*-Pr	OH
18	G = Q-10; X = NH;	R^{18} =	OMe	SMe	Ph	(2,6-diF)Ph
19	G = Q-15; X = NH;	R^{18} =	H	Me	*i*-Pr	OH
20	G = Q-15; X = NH;	R^{18} =	OMe	SMe	Ph	(2,6-diF)Ph
21	G = Q-16; X = NH;	R^{18} =	H	Me	*i*-Pr	OH
22	G = Q-16; X = NH;	R^{18} =	OMe	SMe	Ph	(2,6-diF)Ph
23	G = Q-17; X = NH;	R^{18} =	H	Me	*i*-Pr	OH
24	G = Q-17; X = NH;	R^{18} =	OMe	SMe	Ph	(2,6-diF)Ph
25	G = Q-1; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
26	G = Q-2; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
27	G = Q-3; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
28	G = Q-4; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
29	G = Q-5; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
30	G = Q-6; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
31	G = Q-7; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
32	G = Q-9; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
33	G = Q-10; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
34	G = Q-15; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
35	G = Q-16; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
36	G = Q-17; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
37	G = Q-1; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
38	G = Q-2; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
39	G = Q-3; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
40	G = Q-4; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
41	G = Q-5; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
42	G = Q-6; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
43	G = Q-7; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph

44	G = Q-9; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
45	G = Q-10; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
46	G = Q-15; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
47	G = Q-16; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
48	G = Q-17; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph

TABLE 22

			COLUMN			
			1	2	3	4
1	G = Q-1; X = NH;	R^{18} =	H	Cl	Me	*i*-Pr
2	G = Q-1; X = NH;	R^{18} =	OH	OMe	SMe	S-*n*-Pr
3	G = Q-1; X = NH;	R^{18} =	SO_2Me	COMe	Ph	(2,6-diF)Ph
4	G = Q-2; X = NH;	R^{18} =	H	Cl	Me	*i*-Pr
5	G = Q-2; X = NH;	R^{18} =	OH	OMe	SMe	S-*n*-Pr
6	G = Q-2; X = NH;	R^{18} =	SO_2Me	COMe	Ph	(2,6-diF)Ph
7	G = Q-3; X = NH;	R^{18} =	H	Cl	Me	*i*-Pr
8	G = Q-3; X = NH;	R^{18} =	OH	OMe	SMe	S-*n*-Pr
9	G = Q-3; X = NH;	R^{18} =	SO_2Me	COMe	Ph	(2,6-diF)Ph
10	G = Q-4; X = NH;	R^{18} =	H	Cl	Me	*i*-Pr
11	G = Q-4; X = NH;	R^{18} =	OH	OMe	SMe	S-*n*-Pr
12	G = Q-4; X = NH;	R^{18} =	SO_2Me	COMe	Ph	(2,6-diF)Ph
13	G = Q-5; X = NH;	R^{18} =	H	Cl	Me	*i*-Pr
14	G = Q-5; X = NH;	R^{18} =	OH	OMe	SMe	S-*n*-Pr
15	G = Q-5; X = NH;	R^{18} =	SO_2Me	COMe	Ph	(2,6-diF)Ph
16	G = Q-6; X = NH;	R^{18} =	H	Cl	Me	*i*-Pr
17	G = Q-6; X = NH;	R^{18} =	OH	OMe	SMe	S-*n*-Pr
18	G = Q-6; X = NH;	R^{18} =	SO_2Me	COMe	Ph	(2,6-diF)Ph
19	G = Q-7; X = NH;	R^{18} =	H	Cl	Me	*i*-Pr
20	G = Q-7; X = NH;	R^{18} =	OH	OMe	SMe	S-*n*-Pr
21	G = Q-7; X = NH;	R^{18} =	SO_2Me	COMe	Ph	(2,6-diF)Ph
22	G = Q-9; X = NH;	R^{18} =	H	Cl	Me	*i*-Pr
23	G = Q-9; X = NH;	R^{18} =	OH	OMe	SMe	S-*n*-Pr
24	G = Q-9; X = NH;	R^{18} =	SO_2Me	COMe	Ph	(2,6-diF)Ph
25	G = Q-10; X = NH;	R^{18} =	H	Cl	Me	*i*-Pr
26	G = Q-10; X = NH;	R^{18} =	OH	OMe	SMe	S-*n*-Pr
27	G = Q-10; X = NH;	R^{18} =	SO_2Me	COMe	Ph	(2,6-diF)Ph
28	G = Q-15; X = NH;	R^{18} =	H	Cl	Me	*i*-Pr
29	G = Q-15; X = NH;	R^{18} =	OH	OMe	SMe	S-*n*-Pr
30	G = Q-15; X = NH;	R^{18} =	SO_2Me	COMe	Ph	(2,6-diF)Ph
31	G = Q-16; X = NH;	R^{18} =	H	Cl	Me	*i*-Pr

32	G = Q-16; X = NH;	R^{18} =	OH	OMe	SMe	S-*n*-Pr
33	G = Q-16; X = NH;	R^{18} =	SO_2Me	COMe	Ph	(2,6-diF)Ph
34	G = Q-17; X = NH;	R^{18} =	H	Cl	Me	*i*-Pr
35	G = Q-17; X = NH;	R^{18} =	OH	OMe	SMe	S-*n*-Pr
36	G = Q-17; X = NH;	R^{18} =	SO_2Me	COMe	Ph	(2,6-diF)Ph
37	G = Q-1; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
38	G = Q-2; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
39	G = Q-3; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
40	G = Q-4; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
41	G = Q-5; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
42	G = Q-6; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
43	G = Q-7; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
44	G = Q-9; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
45	G = Q-10; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
46	G = Q-15; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
47	G = Q-16; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
48	G = Q-17; X = O;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
49	G = Q-1; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
50	G = Q-2; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
51	G = Q-3; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
52	G = Q-4; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
53	G = Q-5; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
54	G = Q-6; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
55	G = Q-7; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
56	G = Q-9; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
57	G = Q-10; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
58	G = Q-15; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
59	G = Q-16; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph
60	G = Q-17; X = S;	R^{18} =	H	Me	Ph	(2,6-diF)Ph

TABLE 23

			COLUMN			
			1	2	3	4
1	G = Q-1; X = NH;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
2	G = Q-1; X = NH;	R^{18} =	(4-Cl)Ph	SO_2Me	COMe	CO-*t*-Bu
3	G = Q-1; X = NH;	R^{18} =	CO_2Me	$CONEt_2$	CO_2-*t*-Bu	CONH-*t*-Bu
4	G = Q-2; X = NH;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
5	G = Q-2; X = NH;	R^{18} =	(4-Cl)Ph	SO_2Me	COMe	CO-*t*-Bu
6	G = Q-2; X = NH;	R^{18} =	CO_2Me	$CONEt_2$	CO_2-*t*-Bu	CONH-*t*-Bu
7	G = Q-3; X = NH;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph

8	G = Q-3; X = NH;	R^{18} =	(4-Cl)Ph	SO_2Me	COMe	CO-*t*-Bu
9	G = Q-3; X = NH;	R^{18} =	CO_2Me	$CONEt_2$	CO_2-*t*-Bu	CONH-*t*-Bu
10	G = Q-4; X = NH;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
11	G = Q-4; X = NH;	R^{18} =	(4-Cl)Ph	SO_2Me	COMe	CO-*t*-Bu
12	G = Q-4; X = NH;	R^{18} =	CO_2Me	$CONEt_2$	CO_2-*t*-Bu	CONH-*t*-Bu
13	G = Q-5; X = NH;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
14	G = Q-5; X = NH;	R^{18} =	(4-Cl)Ph	SO_2Me	COMe	CO-*t*-Bu
15	G = Q-5; X = NH;	R^{18} =	CO_2Me	$CONEt_2$	CO_2-*t*-Bu	CONH-*t*-Bu
16	G = Q-6; X = NH;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
17	G = Q-6; X = NH;	R^{18} =	(4-Cl)Ph	SO_2Me	COMe	CO-*t*-Bu
18	G = Q-6; X = NH;	R^{18} =	CO_2Me	$CONEt_2$	CO_2-*t*-Bu	CONH-*t*-Bu
19	G = Q-7; X = NH;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
20	G = Q-7; X = NH;	R^{18} =	(4-Cl)Ph	SO_2Me	COMe	CO-*t*-Bu
21	G = Q-7; X = NH;	R^{18} =	CO_2Me	$CONEt_2$	CO_2-*t*-Bu	CONH-*t*-Bu
22	G = Q-9; X = NH;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
23	G = Q-9; X = NH;	R^{18} =	(4-Cl)Ph	SO_2Me	COMe	CO-*t*-Bu
24	G = Q-9; X = NH;	R^{18} =	CO_2Me	$CONEt_2$	CO_2-*t*-Bu	CONH-*t*-Bu
25	G = Q-10; X = NH;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
26	G = Q-10; X = NH;	R^{18} =	(4-Cl)Ph	SO_2Me	COMe	CO-*t*-Bu
27	G = Q-10; X = NH;	R^{18} =	CO_2Me	$CONEt_2$	CO_2-*t*-Bu	CONH-*t*-Bu
28	G = Q-15; X = NH;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
29	G = Q-15; X = NH;	R^{18} =	(4-Cl)Ph	SO_2Me	COMe	CO-*t*-Bu
30	G = Q-15; X = NH;	R^{18} =	CO_2Me	$CONEt_2$	CO_2-*t*-Bu	CONH-*t*-Bu
31	G = Q-16; X = NH;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
32	G = Q-16; X = NH;	R^{18} =	(4-Cl)Ph	SO_2Me	COMe	CO-*t*-Bu
33	G = Q-16; X = NH;	R^{18} =	CO_2Me	$CONEt_2$	CO_2-*t*-Bu	CONH-*t*-Bu
34	G = Q-17; X = NH;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
35	G = Q-17; X = NH;	R^{18} =	(4-Cl)Ph	SO_2Me	COMe	CO-*t*-Bu
36	G = Q-17; X = NH;	R^{18} =	CO_2Me	$CONEt_2$	CO_2-*t*-Bu	CONH-*t*-Bu
37	G = Q-1; X = O;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
38	G = Q-1; X = O;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
39	G = Q-2; X = O;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
40	G = Q-2; X = O;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
41	G = Q-3; X = O;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
42	G = Q-3; X = O;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
43	G = Q-4; X = O;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
44	G = Q-4; X = O;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
45	G = Q-5; X = O;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
46	G = Q-5; X = O;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
47	G = Q-6; X = O;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph

48	G = Q-6; X = O;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
49	G = Q-7; X = O;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
50	G = Q-7; X = O;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
51	G = Q-9; X = O;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
52	G = Q-9; X = O;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
53	G = Q-10; X = O;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
54	G = Q-10; X = O;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
55	G = Q-15; X = O;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
56	G = Q-15; X = O;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
57	G = Q-16; X = O;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
58	G = Q-16; X = O;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
59	G = Q-17; X = O;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
60	G = Q-17; X = O;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
61	G = Q-1; X = S;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
62	G = Q-1; X = S;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
63	G = Q-2; X = S;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
64	G = Q-2; X = S;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
65	G = Q-3; X = S;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
66	G = Q-3; X = S;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
67	G = Q-4; X = S;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
68	G = Q-4; X = S;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
69	G = Q-5; X = S;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
70	G = Q-5; X = S;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
71	G = Q-6; X = S;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
72	G = Q-6; X = S;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
73	G = Q-7; X = S;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
74	G = Q-7; X = S;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
75	G = Q-9; X = S;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
76	G = Q-9; X = S;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
77	G = Q-10; X = S;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
78	G = Q-10; X = S;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
79	G = Q-15; X = S;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
80	G = Q-15; X = S;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
81	G = Q-16; X = S;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
82	G = Q-16; X = S;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu
83	G = Q-17; X = S;	R^{18} =	Me	*i*-Pr	*t*-Bu	Ph
84	G = Q-17; X = S;	R^{18} =	SO_2Me	CO-*t*-Bu	CO_2-*t*-Bu	CONH-*t*-Bu

TABLE 24

(X = NH; Hal = I)

			COLUMN					
			1	2	3	4	5	6
1	G = Q-1; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*i*-Pr	*c*-Pr
2	G = Q-1; R^6 = Me;	R^5 =	*n*-Bu	*i*-Bu	*c*-Pen	*n*-Hex	*c*-Hex	Bn
3	G = Q-2; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*i*-Pr	*c*-Pr
4	G = Q-2; R^6 = Me;	R^5 =	*n*-Bu	*i*-Bu	*c*-Pen	*n*-Hex	*c*-Hex	Bn
5	G = Q-3; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*i*-Pr	*c*-Pr
6	G = Q-3; R^6 = Me;	R^5 =	*n*-Bu	*i*-Bu	*c*-Pen	*n*-Hex	*c*-Hex	Bn
7	G = Q-4; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*i*-Pr	*c*-Pr
8	G = Q-4; R^6 = Me;	R^5 =	*n*-Bu	*i*-Bu	*c*-Pen	*n*-Hex	*c*-Hex	Bn
9	G = Q-5; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
10	G = Q-6; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
11	G = Q-7; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
12	G = Q-8; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
13	G = Q-9; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
14	G = Q-10; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
15	G = Q-11; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
16	G = Q-12; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
17	G = Q-13; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
18	G = Q-14; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
19	G = Q-15; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
20	G = Q-16; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
21	G = Q-17; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
22	G = Q-1; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
23	G = Q-2; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
24	G = Q-3; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
25	G = Q-4; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
26	G = Q-5; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
27	G = Q-6; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
28	G = Q-7; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
29	G = Q-9; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
30	G = Q-10; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
31	G = Q-15; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
32	G = Q-1; R^6 = 2-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
33	G = Q-2; R^6 = 2-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
34	G = Q-3; R^6 = 2-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
35	G = Q-4; R^6 = 2-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
36	G = Q-5; R^6 = 2-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
37	G = Q-6; R^6 = 2-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn

38	G = Q-7; R^6 = 2-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
39	G = Q-9; R^6 = 2-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
40	G = Q-10; R^6 = 2-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
41	G = Q-15; R^6 = 2-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
42	G = Q-1; R^6 = 3-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
43	G = Q-2; R^6 = 3-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
44	G = Q-3; R^6 = 3-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
45	G = Q-4; R^6 = 3-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
46	G = Q-5; R^6 = 3-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
47	G = Q-6; R^6 = 3-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
48	G = Q-7; R^6 = 3-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
49	G = Q-9; R^6 = 3-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
50	G = Q-10; R^6 = 3-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
51	G = Q-15; R^6 = 3-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
52	G = Q-1; R^6 = 4-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
53	G = Q-2; R^6 = 4-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
54	G = Q-3; R^6 = 4-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
55	G = Q-4; R^6 = 4-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
56	G = Q-5; R^6 = 4-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
57	G = Q-6; R^6 = 4-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
58	G = Q-7; R^6 = 4-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
59	G = Q-9; R^6 = 4-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
60	G = Q-10; R^6 = 4-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
61	G = Q-15; R^6 = 4-Pyr;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
62	G = Q-1; R^6 = 2-Th;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
63	G = Q-2; R^6 = 2-Th;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
64	G = Q-3; R^6 = 2-Th;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
65	G = Q-4; R^6 = 2-Th;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
66	G = Q-5; R^6 = 2-Th;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
67	G = Q-6; R^6 = 2-Th;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
68	G = Q-7; R^6 = 2-Th;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
69	G = Q-9; R^6 = 2-Th;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
70	G = Q-10; R^6 = 2-Th;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
71	G = Q-15; R^6 = 2-Th;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
	(X = NH; Hal = Br)							
72	G = Q-1; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*i*-Pr	*c*-Pr
73	G = Q-2; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*i*-Pr	*c*-Pr
74	G = Q-3; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*i*-Pr	*c*-Pr
75	G = Q-4; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*i*-Pr	*c*-Pr

76	G = Q-5; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
77	G = Q-6; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
78	G = Q-7; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
79	G = Q-9; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
80	G = Q-10; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
81	G = Q-15; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
	(X = NH; Hal = Cl)							
82	G = Q-1; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*i*-Pr	*c*-Pr
83	G = Q-2; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*i*-Pr	*c*-Pr
84	G = Q-3; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*i*-Pr	*c*-Pr
85	G = Q-4; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*i*-Pr	*c*-Pr
86	G = Q-5; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
87	G = Q-6; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
88	G = Q-7; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
89	G = Q-9; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
90	G = Q-10; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
91	G = Q-15; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn

TABLE 25

	(X = O; Hal = I)		COLUMN					
			1	2	3	4	5	6
1	G = Q-1; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
2	G = Q-2; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
3	G = Q-3; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
4	G = Q-4; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
5	G = Q-5; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
6	G = Q-6; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
7	G = Q-7; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
8	G = Q-9; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
9	G = Q-10; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
10	G = Q-15; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
11	G = Q-1; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
12	G = Q-2; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
13	G = Q-3; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
14	G = Q-4; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
15	G = Q-5; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
16	G = Q-6; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn

17	G = Q-7; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
18	G = Q-9; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
19	G = Q-10; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
20	G = Q-15; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
	(X = O; Hal = Br)							
21	G = Q-1; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
22	G = Q-2; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
23	G = Q-3; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
24	G = Q-4; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
25	G = Q-5; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
26	G = Q-6; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
27	G = Q-7; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
28	G = Q-9; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
29	G = Q-10; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
30	G = Q-15; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
	(X = O; Hal = Cl)							
31	G = Q-1; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
32	G = Q-2; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
33	G = Q-3; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
34	G = Q-4; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
35	G = Q-5; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
36	G = Q-6; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
37	G = Q-7; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
38	G = Q-9; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
39	G = Q-10; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
40	G = Q-15; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn

TABLE 26

	(X = S; Hal = I)		COLUMN					
			1	2	3	4	5	6
1	G = Q-1; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
2	G = Q-2; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
3	G = Q-3; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
4	G = Q-4; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
5	G = Q-5; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
6	G = Q-6; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
7	G = Q-7; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
8	G = Q-9; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn

9	G = Q-10; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
10	G = Q-15; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
11	G = Q-1; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
12	G = Q-2; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
13	G = Q-3; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
14	G = Q-4; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
15	G = Q-5; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
16	G = Q-6; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
17	G = Q-7; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
18	G = Q-9; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
19	G = Q-10; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
20	G = Q-15; R^6 = Ph;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
	(X = S; Hal = Br)							
21	G = Q-1; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
22	G = Q-2; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
23	G = Q-3; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
24	G = Q-4; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
25	G = Q-5; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
26	G = Q-6; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
27	G = Q-7; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
28	G = Q-9; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
29	G = Q-10; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
30	G = Q-15; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
	(X = S; Hal = Cl)							
31	G = Q-1; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
32	G = Q-2; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
33	G = Q-3; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
34	G = Q-4; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
35	G = Q-5; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
36	G = Q-6; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
37	G = Q-7; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
38	G = Q-9; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
39	G = Q-10; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn
40	G = Q-15; R^6 = Me;	R^5 =	H	Me	Et	*n*-Pr	*n*-Hex	Bn

Formulation/Utility

Compounds of this invention will generally be used as a formulation or composition with an agriculturally suitable carrier comprising at least one of a liquid diluent, a solid diluent or a surfactant. The formulation or composition ingredients are selected to be

consistent with the physical properties of the active ingredient, mode of application and environmental factors such as soil type, moisture and temperature. Useful formulations include liquids such as solutions (including emulsifiable concentrates), suspensions, emulsions (including microemulsions and/or suspoemulsions) and the like which optionally can be thickened into gels. Useful formulations further include solids such as dusts, powders, granules, pellets, tablets, films, and the like which can be water-dispersible ("wettable") or water-soluble. Active ingredient can be (micro)encapsulated and further formed into a suspension or solid formulation; alternatively the entire formulation of active ingredient can be encapsulated (or "overcoated"). Encapsulation can control or delay release of the active ingredient. Sprayable formulations can be extended in suitable media and used at spray volumes from about one to several hundred liters per hectare. High-strength compositions are primarily used as intermediates for further formulation.

The formulations will typically contain effective amounts of active ingredient, diluent and surfactant within the following approximate ranges which add up to 100 percent by weight.

	Weight Percent		
	Active Ingredient	Diluent	Surfactant
Water-Dispersible and Water-soluble Granules, Tablets and Powders.	5–90	0–94	1–15
Suspensions, Emulsions, Solutions (including Emulsifiable Concentrates)	5–50	40–95	0–15
Dusts	1–25	70–99	0–5
Granules and Pellets	0.01–99	5–99.99	0–15
High Strength Compositions	90–99	0–10	0–2

Typical solid diluents are described in Watkins, et al., *Handbook of Insecticide Dust Diluents and Carriers*, 2nd Ed., Dorland Books, Caldwell, New Jersey. Typical liquid diluents are described in Marsden, *Solvents Guide*, 2nd Ed., Interscience, New York, 1950. *McCutcheon's Detergents and Emulsifiers Annual*, Allured Publ. Corp., Ridgewood, New Jersey, as well as Sisely and Wood, *Encyclopedia of Surface Active Agents*, Chemical Publ. Co., Inc., New York, 1964, list surfactants and recommended uses. All formulations can contain minor amounts of additives to reduce foam, caking, corrosion, microbiological growth and the like, or thickeners to increase viscosity.

Surfactants include, for example, polyethoxylated alcohols, polyethoxylated alkylphenols, polyethoxylated sorbitan fatty acid esters, dialkyl sulfosuccinates, alkyl sulfates, alkylbenzene sulfonates, organosilicones, *N,N*-dialkyltaurates, lignin sulfonates, naphthalene sulfonate formaldehyde condensates, polycarboxylates, and polyoxyethylene/polyoxypropylene block copolymers. Solid diluents include, for example,

clays such as bentonite, montmorillonite, attapulgite and kaolin, starch, sugar, silica, talc, diatomaceous earth, urea, calcium carbonate, sodium carbonate and bicarbonate, and sodium sulfate. Liquid diluents include, for example, water, *N,N*-dimethylformamide, dimethyl sulfoxide, *N*-alkylpyrrolidone, ethylene glycol, polypropylene glycol, paraffins, alkylbenzenes, alkylnaphthalenes, oils of olive, castor, linseed, tung, sesame, corn, peanut, cotton-seed, soybean, rape-seed and coconut, fatty acid esters, ketones such as cyclohexanone, 2-heptanone, isophorone and 4-hydroxy-4-methyl-2-pentanone, and alcohols such as methanol, cyclohexanol, decanol and tetrahydrofurfuryl alcohol.

Solutions, including emulsifiable concentrates, can be prepared by simply mixing the ingredients. Dusts and powders can be prepared by blending and, usually, grinding as in a hammer mill or fluid-energy mill. Suspensions are usually prepared by wet-milling; see, for example, U.S. 3,060,084. Granules and pellets can be prepared by spraying the active material upon preformed granular carriers or by agglomeration techniques. See Browning, "Agglomeration", *Chemical Engineering*, December 4, 1967, pp 147-48, *Perry's Chemical Engineer's Handbook*, 4th Ed., McGraw-Hill, New York, 1963, pages 8-57 and following, and WO 91/13546. Pellets can be prepared as described in U.S. 4,172,714. Water-dispersible and water-soluble granules can be prepared as taught in U.S. 4,144,050, U.S. 3,920,442 and DE 3,246,493. Tablets can be prepared as taught in U.S. 5,180,587, U.S. 5,232,701 and U.S. 5,208,030. Films can be prepared as taught in GB 2,095,558 and U.S. 3,299,566.

For further information regarding the art of formulation, see U.S. 3,235,361, Col. 6, line 16 through Col. 7, line 19 and Examples 10-41; U.S. 3,309,192, Col. 5, line 43 through Col. 7, line 62 and Examples 8, 12, 15, 39, 41, 52, 53, 58, 132, 138-140, 162-164, 166, 167 and 169-182; U.S. 2,891,855, Col. 3, line 66 through Col. 5, line 17 and Examples 1-4; Klingman, *Weed Control as a Science*, John Wiley and Sons, Inc., New York, 1961, pp 81-96; and Hance et al., *Weed Control Handbook*, 8th Ed., Blackwell Scientific Publications, Oxford, 1989.

In the following Examples, all percentages are by weight and all formulations are prepared in conventional ways. Compound numbers refer to compounds in Index Tables A-B.

Example A

Wettable Powder

Compound 2	65.0%
dodecylphenol polyethylene glycol ether	2.0%
sodium ligninsulfonate	4.0%
sodium silicoaluminate	6.0%
montmorillonite (calcined)	23.0%.

Example B

Granule

Compound 4	10.0%
attapulgite granules (low volatile matter, 0.71/0.30 mm; U.S.S. No. 25–50 sieves)	90.0%.

Example C

Extruded Pellet

Compound 2	25.0%
anhydrous sodium sulfate	10.0%
crude calcium ligninsulfonate	5.0%
sodium alkylnaphthalenesulfonate	1.0%
calcium/magnesium bentonite	59.0%.

Example D

Emulsifiable Concentrate

Compound 4	20.0%
blend of oil soluble sulfonates and polyoxyethylene ethers	10.0%
isophorone	70.0%.

The compounds of this invention exhibit activity against a wide spectrum of foliar-feeding, fruit-feeding, stem or root feeding, seed-feeding, aquatic and soil-inhabiting arthropods (term "arthropods" includes insects, mites and nematodes) which are pests of growing and stored agronomic crops, forestry, greenhouse crops, ornamentals, nursery crops, stored food and fiber products, livestock, household, and public and animal health. Those skilled in the art will appreciate that not all compounds are equally effective against all growth stages of all pests. Nevertheless, all of the compounds of this invention display activity against pests that include: eggs, larvae and adults of the Order Lepidoptera; eggs, foliar-feeding, fruit-feeding, root-feeding, seed-feeding larvae and adults of the Order Coleoptera; eggs, immatures and adults of the Orders Hemiptera and Homoptera; eggs, larvae, nymphs and adults of the Order Acari; eggs, immatures and adults of the Orders Thysanoptera, Orthoptera and Dermaptera; eggs, immatures and adults of the Order Diptera; and eggs, juveniles and adults of the Phylum Nematoda. The compounds of this invention are also active against pests of the Orders Hymenoptera, Isoptera, Siphonaptera, Blattaria, Thysanura and Psocoptera; pests belonging to the Class Arachnida and Phylum Platyhelminthes. Specifically, the compounds are active against southern corn rootworm (*Diabrotica undecimpunctata howardi*), aster leafhopper (*Mascrosteles fascifrons*), boll weevil (*Anthonomus grandis*), two-spotted spider mite (*Tetranychus urticae*), fall armyworm (*Spodoptera frugiperda*), black bean aphid (*Aphis fabae*), green peach aphid (*Myzus persica*), cotton aphid (*Aphis gossypii*), Russian wheat aphid (*Diuraphis noxia*), English grain aphid

(*Sitobion avenae*), tobacco budworm (*Heliothis virescens*), rice water weevil (*Lissorhoptrus oryzophilus*), rice leaf beetle (*Oulema oryzae*), whitebacked planthopper (*Sogatella furcifera*), green leafhopper (*Nephotettix cincticeps*), brown planthopper (*Nilaparvata lugens*), small brown planthopper (*Laodelphax striatellus*), rice stem borer (*Chilo suppressalis*), rice leafroller (*Cnaphalocrocis medinalis*), black rice stink bug (*Scotinophara lurida*), rice stink bug (*Oebalus pugnax*), rice bug (*Leptocorisa chinensis*), slender rice bug (*Cletus puntiger*), and southern green stink bug (*Nezara viridula*). The compounds are active on mites, demonstrating ovicidal, larvicidal and chemosterilant activity against such families as Tetranychidae including *Tetranychus urticae, Tetranychus cinnabarinus, Tetranychus mcdanieli, Tetranychus pacificus, Tetranychus turkestani, Byrobia rubrioculus, Panonychus ulmi, Panonychus citri, Eotetranychus carpini borealis, Eotetranychus, hicoriae, Eotetranychus sexmaculatus, Eotetranychus yumensis, Eotetranychus banksi* and *Oligonychus pratensis*; Tenuipalpidae including *Brevipalpus lewisi, Brevipalpus phoenicis, Brevipalpus californicus* and *Brevipalpus obovatus*; Eriophyidae including *Phyllocoptruta oleivora, Eriophyes sheldoni, Aculus cornutus, Epitrimerus pyri* and *Eriophyes mangiferae*. See WO 90/10623 and WO 92/00673 for more detailed pest descriptions.

The compounds of this invention are also useful as plant disease control agents. The present invention therefore further comprises a method for controlling plant diseases caused by fungal plant pathogens comprising applying to the plant or portion thereof to be protected, or to the plant seed or seedling to be protected, an effective amount of a compound of the invention or a fungicidal composition containing said compound. The compounds and compositions of this invention provide control of diseases caused by a broad spectrum of fungal plant pathogens in the Basidiomycete, Ascomycete, Oomycete and Deuteromycete classes. They are effective in controlling a broad spectrum of plant diseases, particularly foliar pathogens of ornamental, vegetable, field, cereal, and fruit crops. These pathogens include *Plasmopara viticola, Phytophthora infestans, Peronospora tabacina, Pseudoperonospora cubensis, Pythium aphanidermatum, Alternaria brassicae, Septoria nodorum, Septoria tritici, Cercosporidium personatum, Cercospora arachidicola, Pseudocercosporella herpotrichoides, Cercospora beticola, Botrytis cinerea, Monilinia fructicola, Pyricularia oryzae, Podosphaera leucotricha, Venturia inaequalis, Erysiphe graminis, Uncinula necatur, Puccinia recondita, Puccinia graminis, Hemileia vastatrix, Puccinia striiformis, Puccinia arachidis, Rhizoctonia solani, Sphaerotheca fuliginea, Fusarium oxysporum, Verticillium dahliae, Pythium aphanidermatum, Phytophthora megasperma, Sclerotinia sclerotiorum, Sclerotium rolfsii, Erysiphe polygoni, Pyrenophora teres, Gaeumannomyces graminis, Rynchosporium secalis, Fusarium roseum, Bremia lactucae* and other generea and species closely related to these pathogens.

Compounds of this invention can also be mixed with one or more other insecticides, fungicides, nematocides, bactericides, acaricides, growth regulators, chemosterilants,

semiochemicals, repellents, attractants, pheromones, feeding stimulants or other biologically active compounds to form a multi-component pesticide giving an even broader spectrum of agricultural protection. Examples of such agricultural protectants with which compounds of this invention can be formulated are: insecticides such as abamectin, acephate, azinphos-methyl, bifenthrin, buprofezin, carbofuran, chlorfenapyr, chlorpyrifos, chlorpyrifos-methyl, cyfluthrin, beta-cyfluthrin, cyhalothrin, lambda-cyhalothrin, deltamethrin, diafenthiuron, diazinon, diflubenzuron, dimethoate, esfenvalerate, fenoxycarb, fenpropathrin, fenvalerate, fipronil, flucythrinate, tau-fluvalinate, fonophos, imidacloprid, isofenphos, malathion, metaldehyde, methamidophos, methidathion, methomyl, methoprene, methoxychlor, methyl 7-chloro-2,5-dihydro-2-[[*N*-(methoxycarbonyl)-*N*-[4-(trifluoromethoxy)phenyl]amino]carbonyl]indeno[1,2-*e*][1,3,4]oxadiazine-4a(3*H*)-carboxylate (DPX-JW062), monocrotophos, oxamyl, parathion, parathion-methyl, permethrin, phorate, phosalone, phosmet, phosphamidon, pirimicarb, profenofos, rotenone, sulprofos, tebufenozide, tefluthrin, terbufos, tetrachlorvinphos, thiodicarb, tralomethrin, trichlorfon and triflumuron; fungicides such as azoxystrobin, benomyl, blasticidin-S, Bordeaux mixture (tribasic copper sulfate), bromuconazole, captafol, captan, carbendazim, chloroneb, chlorothalonil, copper oxychloride, copper salts, cymoxanil, cyproconazole, cyprodinil (CGA 219417), diclomezine, dicloran, difenoconazole, dimethomorph, diniconazole, diniconazole-M, dodine, edifenphos, epoxiconazole (BAS 480F), famoxadone, fenarimol, fenbuconazole, fenpiclonil, fenpropidin, fenpropimorph, fluazinam, fluquinconazole, flusilazole, flutolanil, flutriafol, folpet, fosetyl-aluminum, furalaxyl, hexaconazole, ipconazole, iprobenfos, iprodione, isoprothiolane, kasugamycin, kresoxim-methyl, mancozeb, maneb, mepronil, metalaxyl, metconazole, *S*-methyl 7-benzothiazolecarbothioate (CGA 245704), myclobutanil, neo-asozin (ferric methanearsonate), oxadixyl, penconazole, pencycuron, probenazole, prochloraz, propiconazole, pyrifenox, pyroquilon, quinoxyfen, spiroxamine (KWG4168), sulfur, tebuconazole, tetraconazole, thiabendazole, thiophanate-methyl, thiram, triadimefon, triadimenol, tricyclazole, triticonazole, validamycin and vinclozolin; nematocides such as aldoxycarb and fenamiphos; bactericides such as streptomycin; acaricides such as amitraz, chinomethionat, chlorobenzilate, cyhexatin, dicofol, dienochlor, etoxazole, fenazaquin, fenbutatin oxide, fenpropathrin, fenpyroximate, hexythiazox, propargite, pyridaben and tebufenpyrad; and biological agents such as *Bacillus thuringiensis*, *Bacillus thuringiensis* delta endotoxin, baculovirus, and entomopathogenic bacteria, virus and fungi.

In certain instances, combinations with other fungicides or arthropodicides having a similar spectrum of control but a different mode of action will be particularly advantageous for resistance management.

Preferred for better control of pests (use rate or spectrum) or resistance management are mixtures of a compound of this invention with an arthropodicide selected from the group:

acephate, buprofezin, carbofuran, 2,5-dihydro-2-[[*N*-(methoxycarbonyl)-*N*-[4-(trifluoromethoxy)phenyl]amino]carbonyl]indeno[1,2-*e*][1,3,4]oxadiazine-4a(3*H*)-carboxylate (DPX-JW062), dimethoate, esfenvalerate, fipronil, imidacloprid, methomyl, monocrotophos, phorate, and phosphamidon.

Arthropod pests are controlled and protection of agronomic, horticultural and specialty crops, animal and human health is achieved by applying one or more of the compounds of this invention, in an effective amount, to the environment of the pests including the agronomic and/or nonagronomic locus of infestation, to the area to be protected, or directly on the pests to be controlled. Thus, the present invention further comprises a method for the control of foliar and soil inhabiting arthropods and nematode pests and protection of agronomic and/or nonagronomic crops, comprising applying one or more of the compounds of the invention, or compositions containing at least one such compound, in an effective amount, to the environment of the pests including the agronomic and/or nonagronomic locus of infestation, to the area to be protected, or directly on the pests to be controlled. A preferred method of application is by spraying. Alternatively, granular formulations of these compounds can be applied to the plant foliage or the soil. Other methods of application include direct and residual sprays, aerial sprays, seed coats, microencapsulations, systemic uptake, baits, eartags, boluses, foggers, fumigants, aerosols, dusts and many others. The compounds can be incorporated into baits that are consumed by the arthropods or in devices such as traps and the like.

For the control arthropod pests, the compounds of this invention can be applied in their pure state, but most often application will be of a formulation comprising one or more compounds with suitable carriers, diluents, and surfactants and possibly in combination with a food depending on the contemplated end use. A preferred method of application involves spraying a water dispersion or refined oil solution of the compounds. Combinations with spray oils, spray oil concentrations, spreader stickers, adjuvants, other solvents, and synergists such as piperonyl butoxide often enhance compound efficacy.

The rate of application required for effective control will depend on such factors as the species of arthropod to be controlled, the pest's life cycle, life stage, its size, location, time of year, host crop or animal, feeding behavior, mating behavior, ambient moisture, temperature, and the like. Under normal circumstances, application rates of about 0.01 to 2 kg of active ingredient per hectare are sufficient to control pests in agronomic ecosystems, but as little as 0.001 kg/hectare may be sufficient or as much as 8 kg/hectare may be required. For nonagronomic applications, effective use rates will range from about 1.0 to 50 mg/square meter but as little as 0.1 mg/square meter may be sufficient or as much as 150 mg/square meter may be required.

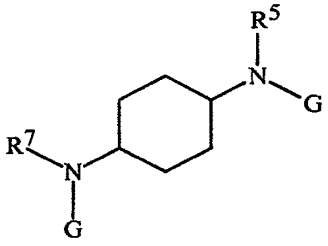
Plant disease control is ordinarily accomplished by applying an effective amount of a compound of this invention either pre- or post-infection, to the portion of the plant to be

protected such as the roots, stems, foliage, fruit, seeds, tubers or bulbs, or to the media (soil or sand) in which the plants to be protected are growing. The compounds can also be applied to the seed to protect the seed and seedling.

For plant disease control, rates of application for these compounds can be influenced by many factors of the environment and should be determined under actual use conditions. Foliage can normally be protected when treated at a rate of from less than 1 g/ha to 5,000 g/ha of active ingredient. Seed and seedlings can normally be protected when seed is treated at a rate of from 0.1 to 10 g per kilogram of seed.

The following tests demonstrate the control efficacy of compounds of this invention on specific arthropod and pathogen pests. For the tests on arthropod pests, "control efficacy" represents inhibition of arthropod development (including mortality) that causes significantly reduced feeding. The arthropod and pathogen pest control protection afforded by the compounds is not limited, however, to these species. See Index Tables A-D for compound descriptions. The abbreviation "Ex." stands for "Example" and is followed by a number indicating in which example the compound is prepared. Isomer indicates *cis* or *trans* with respect to the cyclohexane ring.

INDEX TABLE A

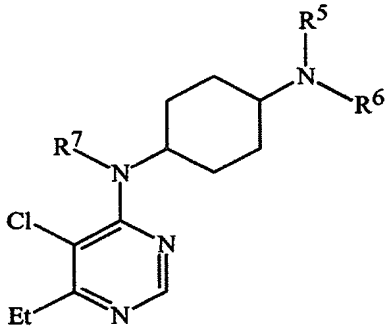


Cmpd No. (Ex. No.)	Isomer	R^7	R^5	G	mp (°C)
1 (Ex. 1)	*cis*	H	H	6-Et-5-Cl-4-pyrimidinyl	119-121
2	*trans*	H	H	6-Et-5-Cl-4-pyrimidinyl	> 255 [a]
3	*cis:trans* = 7.5:1	H	H	4-quinazolinyl	solid [a]
4	*trans*	H	H	4-quinazolinyl	> 260 [a]
5	*cis*	H	H	6-$MeOCH_2$-5-MeO-4-pyrimidinyl	109-111
6	*cis:trans* = 18:1	H	H	6-$MeOCH_2$-4-pyrimidinyl	solid [a]
7	*cis*	H	H	5,6,7,8-tetrahydro-4-quinazolinyl	solid [a]
8	*cis*	H	H	6-Et-4-pyrimidinyl	123-124

Cmpd No. (Ex. No.)	Isomer	R^7	R^5	G	mp (°C)
9	*cis*	H	H	3-*t*-Bu-1,2,4-thiadiazol-5-yl	175-180
10 (Ex. 2a)	*cis*	H	Me	6-Et-5-Cl-4-pyrimidinyl	68-70
11	*cis*	H	Et	6-Et-5-Cl-4-pyrimidinyl	oil [a]
12	*cis*	H	*n*-Pr	6-Et-5-Cl-4-pyrimidinyl	81-83
13	*cis*	H	*n*-Bu	6-Et-5-Cl-4-pyrimidinyl	oil [a]
14	*cis*	H	$CH_2CH=CH_2$	6-Et-5-Cl-4-pyrimidinyl	oil [a]
15 (Ex. 2b)	*cis*	Me	Me	6-Et-5-Cl-4-pyrimidinyl	86-87
16	*cis*	Et	Et	6-Et-5-Cl-4-pyrimidinyl	99-100
17	*cis*	$CH_2CH=CH_2$	$CH_2CH=CH_2$	6-Et-5-Cl-4-pyrimidinyl	oil [a]
18 (Ex. 3)	*cis*	H•HCl	H•HCl	6-Et-5-Cl-4-pyrimidinyl	239-242

[a] See Index Table D for ^1H NMR data.

INDEX TABLE B



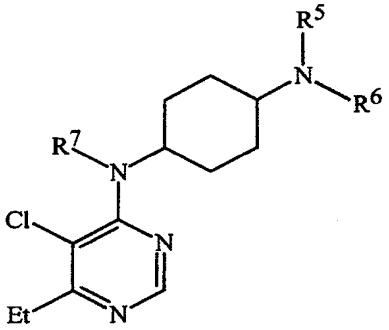
Cmpd No.	Isomer	R^7	R^5	R^6	mp (°C)
19	*cis*	H	COMe	H	158-159
20	*cis*	Me	COMe	H	126-133 [a]
21	*cis*	H	CO_2-*t*-Bu	H	152-154
22	*cis*	Me	CO_2-*t*-Bu	H	121-127
23	*cis*	Et	CO_2-*t*-Bu	H	oil [a]
24	*cis*	$CH_2C\equiv CH$	CO_2-*t*-Bu	H	solid [a]

Cmpd No.	Isomer	R^7	R^5	R^6	mp (°C)
25	*cis*	H	CO_2Bn	H	oil [a]
26 (Ex. 11a)	*cis*	H	OMe	H	oil [a]
27 (Ex. 11b)	*trans*	H	OMe	H	87-88
28	*cis*	Me	OMe	H	oil [a]
29	*cis:trans* = 7:1	H	OBn	H	oil [a]
30	*trans*	H	OBn	H	116-121
31 (Ex. 7a)	*cis*	H	Me	Me	62-66
32 (Ex. 7b)	*trans*	H	Me	Me	oil [a]
33	*cis*	H	*n*-Bu	Me	oil [a]
34	*trans*	H	*n*-Bu	Me	47-48
35	*cis*	Me	CO_2Et	Me	oil [a]
36	*cis*	H	OMe	Me	oil [a]
37 (Ex. 5a)	*cis*	H	H	Ph	88-93
38 (Ex. 5b)	*trans*	H	H	Ph	137-139
39	*cis*	H	Me	Ph	oil [a]
40	*trans:cis* = 8:1	H	Me	Ph	83-84 [a]
41	*trans:cis* = 1.3:1	H	Et	Ph	oil [a]
42	*cis:trans* = 2:1	H	Bn	Ph	oil [a]
43	*trans*	H	Bn	Ph	oil [a]
44	*cis:trans* = 1.5:1	H	$CH_2CH{=}CH_2$	Ph	oil [a]
45	*trans:cis* = 6:1	H	$CH_2CH{=}CH_2$	Ph	oil [a]
46 (Ex. 6)	*cis*	H	$CH_2C{\equiv}CH$	Ph	oil [a]
47	*cis*	H	CH_2CN	Ph	79-80
48	*cis*	H	$(CH_2)_2OH$	Ph	111-115
49	*trans*	H	$(CH_2)_2OH$	Ph	solid [a]
50	*cis*	H	CH_2CO_2-*t*-Bu	Ph	solid [a]
51	*cis*	H	COMe	Ph	125-127
52	*cis*	H	COEt	Ph	86-90
53	*cis*	H	$COCF_3$	Ph	99-101
54	*cis*	H	CO-*c*-Pr	Ph	oil [a]
55	*cis*	H	CO-*t*-Bu	Ph	80-81
56	*cis*	H	COPh	Ph	134-136
57	*cis*	H	CO_2Me	Ph	95
58	*cis*	H	CO_2Et	Ph	oil [a]
59	*trans*	H	CO_2Et	Ph	137-140
60	*cis*	H	CO_2-*i*-Pr	Ph	72-75
61	*cis*	H	CO_2-*t*-Bu	Ph	oil [a]
62	*cis*	H	CO_2Bn	Ph	88-89
63	*cis*	H	$CONMe_2$	Ph	oil [a]
64	*cis*	H	SO_2CF_3	Ph	93-94
65	*cis*	H	SO_2Ph	Ph	solid [a]

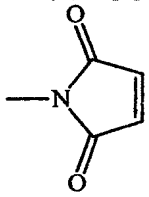
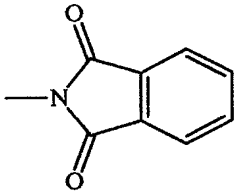
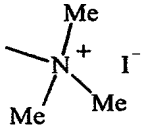
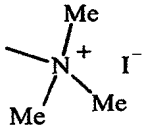
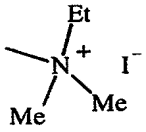
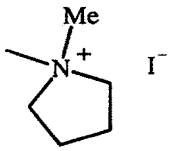
Cmpd No.	Isomer	R^7	R^5	R^6	mp (°C)
66 (Ex. 12)	*cis*	H	OMe	COMe	oil [a]
67	*cis*	H	OBn	COMe	132-134
68	*cis*	H	H	2,6-diCl-4-CF_3-Ph	71-72
69	*cis*	H	H	3-Cl-5-CF_3-2-pyridinyl	91-92
70 (Ex. 2c)	*cis*	Me	Me	5-Cl-6-*i*-Pr-4-pyrimidinyl	95-97
71 (Ex. 9)	*cis*	H	H	6-$MeOCH_2$-5-MeO-4-pyrimidinyl	> 104 [a]
72 (Ex. 4)	*cis*	H	H	4-quinazolinyl	188-191
73	*cis*	H	H	3-*t*-Bu-1,2,4-thiadiazol-5-yl	solid [a]

[a] See Index Table D for ^1H NMR data.

INDEX TABLE C



Cmpd No.	Isomer	R^7	NR^5R^6	mp (°C)
74	*cis:trans* = 1.4:1	H	1-piperidinyl	solid [a]
75	*cis*	H	1-pyrrolidinyl	95-97
76	*trans*	H	1-pyrrolidinyl	59-62
77	*cis*	H	4-morpholinyl	145-146
78	*trans*	H	4-morpholinyl	141-146
79	*cis*	H	4-Me-1-piperazinyl	oil [a]
80	*trans*	H	4-Me-1-piperazinyl	85-89
81	*cis*	H	4-Et-1-piperazinyl	oil [a]
82	*trans*	H	4-Et-1-piperazinyl	91-96
83	*cis*	H	4-($C_6H_5CH_2$)-1-piperazinyl	oil [a]
84	*trans*	H	4-($C_6H_5CH_2$)-1-piperazinyl	88-89
85	*cis*	H	4-(C_6H_5)-1-piperazinyl	105-108
86	*trans*	H	4-(C_6H_5)-1-piperazinyl	115-120
87	*cis*	H	4-(4-F-C_6H_5)-1-piperazinyl	93-94
88	*trans*	H	4-(4-F-C_6H_5)-1-piperazinyl	70-72
89	*cis*	H	4-(2-pyridinyl)-1-piperazinyl	130-137 [a]

Cmpd No.	Isomer	R^7	NR^5R^6	mp (°C)
90	*trans:cis* = 10:1	H	4-(2-pyridinyl)-1-piperazinyl	100-103 [a]
91	*cis*	H		145-154 [a]
92 (Ex. 10)	*cis*	H		157-160
93 (Ex. 8)	*cis*	H		217-221
94	*trans*	H		194-197
95	*cis*	H		106-110
96	*cis*	H		61-64

[a] See Index Table D for ^{1}H NMR data.

INDEX TABLE D

Cmpd No.	Isomer	^{1}H NMR Data [b]
2		δ (CF_3CO_2D) 8.57 (s, 2H), 4.36 (m, 2H), 2.99 (q, 4H), 2.26 (m, 4H), 1.71 (m, 4H), 1.36 (t, 6H).
3	*cis*	δ (DMSO-d_6) 8.50 (s, 2H), 8.43 (dd, 2H), 7.81 (d, 2H), 7.77 (ddd, 2H), 7.68 (dd, 2H), 7.52 (ddd, 2H), 4.32 (m, 2H), 2.09 (m, 4H), 1.80 (m, 4H).
4	*trans*	δ (CF_3CO_2D) 8.92 (s, 2H), 8.35 (d, 2H), 8.15 (t, 2H), 7.91 (m, 4H), 4.70 (m, 2H), 2.47 (m, 4H), 1.98 (m, 4H).
6	*cis*	δ 8.48 (s, 2H), 6.47 (s, 2H), 5.04 (br s, 2H), 4.40 (s, 4H), 3.92 (br s, 2H), 3.49 (s, 6H), 1.92 (m, 4H), 1.72 (m, 4H).
7	*cis*	δ 8.42 (s, 2H), 4.50 (d, 2H), 4.25 (m, 2H), 2.71 (t, 4H), 2.33 (t, 4H), 2.06-1.62 (m, 16H).

Cmpd No.	Isomer	^{1}H NMR Data [b]
11	*cis*	δ 8.48 (s, 1H), 8.43 (s, 1H), 5.63 (d, 1H), 4.34 (m, 1H), 4.03 (m, 1H), 3.55 (q, 2H), 2.87 (q, 2H), 2.81 (q, 2H), 2.13-1.65 (m, 8H), 1.29 (t, 3H), 1.28 (t, 3H), 1.16 (t, 3H).
13	*cis*	δ 8.48 (s,1H), 8.43 (s, 1H), 5.61 (d, 1H), 4.33 (m, 1H), 3.98 (m, 1H), 3.45 (m, 2H), 2.87 (q, 2H), 2.81 (q, 2H), 2.14-1.64 (m, 8H), 1.50 (m, 2H), 1.32 (m, 2H), 1.29 (t, 3H), 1.28 (t, 3H), 0.91 (t, 3H).
14	*cis*	δ 8.49 (s, 1H), 8.42 (s, 1H), 5.92 (ddt, 1H), 5.64 (d, 1H), 5.21 (dq, 1H), 5.12 (dq, 1H), 4.35 (m, 1H), 4.15 (dt, 2H), 4.00 (m, 1H), 2.87 (q, 2H), 2.81 (q, 2H), 2.04 (m, 4H), 1.85-1.63 (m, 4H), 1.29 (t, 3H), 1.28 (t, 3H).
17	*cis*	δ 8.56 (s, 2H), 5.79 (m, 2H), 5.13 (m, 2H), 5.06 (m, 2H), 4.08 (m, 6H), 2.89 (q, 4H), 2.01 (m, 4H), 1.56 (m, 4H), 1.30 (t, 6H).
20	*cis*	δ 8.44 (s, 1H), 5.68 (br d, 1H), 4.12 (m, 2H), 3.01 (s, 3H), 2.85 (q, 2H), 2.04 (s, 3H), 1.96 (m, 2H), 1.73 (m, 6H), 1.28 (t, 3H).
23	*cis*	δ 8.46 (s, 1H), 4.78 (br s, 1H), 4.02 (m, 1H), 3.82 (m, 1H), 3.54 (q, 2H), 2.86 (q, 2H), 1.97-1.53 (m, 8H), 1.47 (s, 9H), 1.28 (t, 3H), 1.12 (t, 3H).
24	*cis*	δ 8.56 (s, 1H), 4.72 (br s, 1H), 4.24 (d, 2H), 4.15 (m, 1H), 3.80 (m, 1H), 2.89 (q, 2H), 2.19 (t, 1H), 1.98-1.56 (m, 8H), 1.47 (s, 9H), 1.29 (t, 3H).
25	*cis*	δ 8.40 (s, 1H), 7.35 (m, 5H), 5.34 (d, 1H), 5.10 (s, 2H), 4.98 (br s , 1H), 4.13 (m, 1H), 3.78 (m, 1H), 2.77 (q, 2H), 1.84 (m, 4H), 1.68 (m, 4H), 1.25 (t, 3H).
26	*cis*	δ 8.41 (s, 1H), 5.47 (br s, 1H), 5.42 (br d, 1H), 4.18 (m, 1H), 3.58 (s, 3H), 3.07 (m, 1H), 2.78 (q, 2H), 1.87-1.55 (m, 8H), 1.26 (t, 3H).
28	*cis*	δ 8.43 (s, 1H), 5.43 (br s, 1H), 4.15 (d, 1H), 3.59 (s, 3H), 3.17 (m, 1H), 3.00 (s, 3H), 2.85 (q, 2H), 2.06-1.87 (m, 4H), 1.61 (m, 4H), 1.28 (t, 3H).
29	*cis*	δ 8.40 (s, 1H), 7.39-7.23 (m, 5H), 5.46 (br s, 1H), 5.40 (d, 1H), 4.73 (s, 2H), 4.17 (m, 1H), 3.12 (m, 1H), 2.78 (q, 2H), 1.82-1.57 (m, 8H), 1.26 (t, 3H).
32	*trans*	δ 8.40 (s, 1H), 5.19 (d, 1H), 3.94 (m, 1H), 2.78 (q, 2H), 2.36 (s, 6H), 2.38 (m, 1H), 2.21 (m, 2H), 2.01 (m, 2H), 1.47 (m, 2H), 1.28 (m, 2H), 1.26 (t, 3H).
33	*cis*	δ 8.41 (s, 1H), 5.53 (d, 1H), 4.27 (m, 1H), 2.79 (q, 2H), 2.64 (m, 3H), 2.42 (s, 3H), 2.12-1.47 (m, 10H), 1.34 (m, 2H), 1.26 (t, 3H), 0.95 (t, 3H).
35	*cis*	δ 8.58 (s, 1H), 4.13 (q, 2H), 4.06 (m, 1H), 3.95 (m, 1H), 2.91 (s, 3H), 2.90 (q, 2H), 2.84 (s, 3H), 2.15 (m, 2H), 1.83-1.44 (m, 6H), 1.31 (t, 3H), 1.26 (t, 3H).
36	*cis*	δ 8.41 (s, 1H), 5.46 (d, 1H), 4.22 (m, 1H), 3.55 (s, 3H), 2.78 (q, 2H), 2.59 (s, 3H), 2.51 (m, 1H), 1.93-1.60 (m, 8H), 1.26 (t, 3H).
39	*cis*	δ 8.43 (s, 1H), 7.24 (m, 2H), 6.82 (d, 2H), 6.74 (t, 1H), 5.58 (br d, 1H), 4.33 (m, 1H), 3.67 (m, 1H), 2.82 (s, 3H), 2.81 (q, 2H), 2.10 (m, 2H), 1.74 (m, 6H), 1.28 (t, 3H).
40	*trans*	δ 8.42 (s, 1H), 7.23 (m, 2H), 6.79 (d, 2H), 6.71 (t, 1H), 5.20 (d, 1H), 3.99 (m, 1H), 3.66 (tt, 1H), 2.79 (s, 3H), 2.78 (q, 2H), 2.23 (d, 2H), 1.94-1.66 (m, 4H), 1.41 (m, 2H), 1.26 (t, 3H).

Cmpd No.	Isomer	^{1}H NMR Data [b]
41	*cis*	δ 8.43 (s, 1H), 7.24 (m, 2H), 6.79 (d, 2H), 6.71 (t, 1H), 5.58 (d, 1H), 4.34 (m, 1H), 3.63 (m, 1H), 3.30 (q, 2H), 2.82 (q, 2H), 2.08 (br d, 2H), 1.88-1.63 (m, 6H), 1.28 (t, 3H), 1.17 (t, 3H).
41	*trans*	δ 8.42 (s, 1H), 7.21 (m, 2H), 6.74 (d, 2H), 6.68 (t, 1H), 5.21 (d, 1H), 4.01 (m, 1H), 3.63 (m, 1H), 3.29 (q, 2H), 2.78 (q, 2H), 2.23 (br d, 2H), 1.96 (br d, 2H), 1.65 (m, 2H), 1.40 (m, 2H), 1.27 (t, 3H), 1.17 (t, 3H).
42	*cis*	δ 8.41 (s, 1H), 7.38-7.11 (m, 7H), 6.72 (m, 3H), 5.51 (br d, 1H), 4.50 (s, 2H), 4.32 (m, 1H), 3.88 (m, 1H), 2.78 (q, 2H), 2.08 (br d, 2H), 1.93-1.57 (m, 6H), 1.26 (t, 3H).
43	*trans*	δ 8.38 (s, 1H), 7.34-7.11 (m, 7H), 6.70 (m, 3H), 5.19 (d, 1H), 4.48 (s, 2H), 3.97 (m, 1H), 3.86 (m, 1H), 2.77 (q, 2H), 2.21 (br d, 2H), 2.00 (br d, 2H), 1.66 (m, 2H), 1.41 (m, 2H), 1.25 (t, 3H).
44	*cis*	δ 8.43 (s, 1H), 7.22 (m, 2H), 6.76 (m, 3H), 5.91 (m, 1H), 5.57 (d, 1H), 5.21 (m, 3H), 4.33 (m, 1H), 3.87 (m, 2H), 3.73 (m, 1H), 2.80 (q, 2H), 2.09 (br d, 2H), 1.92-1.59 (m, 6H), 1.28 (t, 3H).
45	*trans*	δ 8.41 (s, 1H), 7.21 (dd, 2H), 6.72 (m, 3H), 5.89 (m, 1H), 5.19 (m, 3H), 4.20 (m, 1H), 3.86 (m, 2H), 3.73 (m, 1H), 2.79 (q, 2H), 2.23 (br d, 2H), 1.97 (br d, 2H), 1.67 (m, 2H), 1.41 (m, 2H), 1.26 (t, 3H).
46	*cis*	δ 8.42 (s, 1H), 7.28 (m, 2H), 6.99 (m, 2H), 6.86 (t, 1H), 5.57 (d, 1H), 4.31 (m, 1H), 3.99 (d, 2H), 3.70 (m, 1H), 2.80 (q, 2H), 2.22 (t, 1H), 2.04 (m, 2H), 1.94-1.68 (m, 6H), 1.27 (t, 3H).
49	*trans*	δ 8.40 (s, 1H), 7.25 (dd, 2H), 6.90 (d, 2H), 6.83 (t, 1H), 5.20 (d, 1H), 3.97 (m, 1H), 3.67 (t, 2H), 3.53 (m, 1H), 3.37 (t, 2H), 2.78 (q, 2H), 2.23 (br d, 2H), 1.94 (br d, 2H), 1.87-1.58 (m, 3H), 1.38 (m, 2H), 1.26 (t, 3H).
50	*cis*	δ 8.43 (s, 1H), 7.24 (m, 2H), 6.73 (m, 3H), 5.57 (d, 1H), 4.34 (m, 1H), 3.90 (s, 2H), 3.77 (m, 1H), 2.80 (q, 2H), 2.08 (m, 2H), 1.98-1.50 (m, 6H), 1.45 (s, 9H), 1.28 (t, 3H).
54	*cis*	δ 8.36 (s, 1H), 7.44 (m, 3H), 7.22 (m, 2H), 5.27 (d, 1H), 4.67 (tt, 1H), 4.26 (m, 1H), 2.73 (q, 2H), 1.97 (br d, 2H), 1.78 (m, 4H), 1.34 (m, 2H), 1.23 (t, 3H), 1.12 (m, 1H), 0.98 (m, 2H), 0.57 (m, 2H).
58	*cis*	δ 8.37 (s, 1H), 7.43-7.27 (m, 3H), 7.12 (m, 2H), 5.32 (d, 1H), 4.34-4.06 (m, 4H), 2.74 (q, 2H), 1.99 (br d, 2H), 1.85 (br d, 2H), 1.73 (m, 2H), 1.47 (m, 2H), 1.23 (t, 3H), 1.16 (t, 3H).
61	*cis*	δ 8.37 (s, 1H), 7.41-7.25 (m, 3H), 7.09 (m, 2H), 5.31 (d, 1H), 4.31-4.11 (m, 2H), 2.73 (q, 2H), 2.04-1.65 (m, 6H), 1.42 (m, 2H), 1.37 (s, 9H), 1.23 (t, 3H).
63	*cis*	δ 8.38 (s, 1H), 7.34 (m, 2H), 7.19 (m, 1H), 7.06 (m, 2H), 5.53 (d, 1H), 4.31 (m, 1H), 3.99 (m, 1H), 2.75 (q, 2H), 2.62 (s, 6H), 1.97 (br d, 2H), 1.89-1.61 (m, 6H), 1.24 (t, 3H).

Cmpd No.	Isomer	^{1}H NMR Data [b]
65	*cis*	δ 8.35 (s, 1H), 7.73 (m, 2H), 7.58-7.29 (m, 6H), 7.05 (m, 2H), 5.12 (d, 1H), 4.28 (tt, 1H), 4.22 (m, 1H), 2.70 (q, 2H), 2.01-1.67 (m, 6H), 1.33 (m, 2H), 1.20 (t, 3H).
66	*cis*	δ 8.42 (s, 1H), 5.61 (d, 1H), 4.33 (m, 1H), 4.28 (m, 1H), 3.79 (s, 3H), 2.80 (q, 2H), 2.16 (s, 3H), 2.06 (m, 2H), 1.97-1.68 (m, 6H), 1.27 (t, 3H).
71	*cis*	δ 8.42 (s, 1H), 8.38 (s, 1H), 5.41 (d, 1H), 5.31 (d, 1H), 4.47 (s, 2H), 4.20 (m, 2H), 3.83 (s, 3H), 3.49 (s, 3H), 2.80 (q, 2H), 1.95 (m, 4H), 1.75 (m, 4H), 1.27 (t, 3H).
73	*cis*	δ 8.41 (s, 1H), 5.88 (d, 1H), 5.31 (d, 1H), 4.17 (m, 1H), 3.49 (m, 1H), 2.79 (q, 2H), 1.92 (m, 6H), 1.68 (m, 2H), 1.36 (s, 9H), 1.27 (t, 3H).
74	*cis*	δ 8.41 (s, 1H), 5.54 (d, 1H), 4.30 (m, 1H), 2.79 (m, 7H), 2.17-1.42 (m, 14H), 1.26 (t, 3H).
74	*trans*	δ 8.40 (s, 1H), 5.17 (d, 1H), 3.96 (m, 1H), 2.94-2.61 (m, 7H), 2.32-1.28 (m, 14H), 1.25 (t, 3H).
79	*cis*	δ 8.41 (s, 1H), 5.48 (d, 1H), 4.24 (m, 1H), 2.78 (q, 2H), 2.71-2.34 (m, 8H), 2.30 (s, 3H), 2.23 (m, 1H), 1.97-1.53 (m, 8H), 1.26 (t, 3H).
81	*cis*	δ 8.40 (s, 1H), 5.49 (d, 1H), 4.24 (m, 1H), 2.78 (q, 2H), 2.75-2.33 (m, 8H), 2.42 (q, 2H), 2.23 (m, 1H), 1.97-1.52 (m, 8H), 1.26 (t, 3H), 1.10 (t, 3H).
83	*cis*	δ 8.40 (s, 1H), 7.34-7.20 (m, 5H), 5.48 (d, 1H), 4.23 (m, 1H), 3.52 (s, 2H), 2.77 (q, 2H), 2.54 (m, 8H), 2.22 (m, 1H), 1.97-1.52 (m, 8H), 1.26 (t, 3H).
89	*cis*	δ 8.41 (s, 1H), 8.20 (ddd, 1H), 7.48 (ddd, 1H), 6.66 (d, 1H), 6.62 (dd, 1H), 5.49 (d, 1H), 4.25 (m, 1H), 3.56 (m, 4H), 2.78 (q, 2H), 2.67 (m, 4H), 2.29 (m, 1H), 2.01-1.59 (m, 8H), 1.26 (t, 3H).
90	*trans*	δ 8.41 (s, 1H), 8.20 (m, 1H), 7.47 (m, 1H), 6.63 (m, 2H), 5.19 (d, 1H), 3.96 (m, 1H), 3.55 (m, 4H), 2.78 (q, 2H), 2.70 (m, 4H), 2.41 (t, 1H), 2.22 (d, 2H), 2.01 (d, 2H), 1.51 (q, 2H), 1.28 (m, 2H), 1.26 (t, 3H).
91	*cis*	δ 8.41 (s, 1H), 6.66 (s, 2H), 5.79 (d, 1H), 4.42 (m, 1H), 4.04 (tt, 1H), 2.81 (q, 2H), 2.32 (m, 2H), 2.07 (br d, 2H), 1.67 (m, 4H), 1.28 (t, 3H).

[b] ^{1}H NMR spectra are recorded in $CDCl_3$ unless otherwise indicated. ^{1}H NMR spectra are reported in ppm downfield from tetramethylsilane; s = singlet, d = doublet, t = triplet, q = quartet, m = multiplet, dd = doublet of doublets, dt = doublet of triplets, dq = doublet of quartets, ddd = doublet of doublet of doublets, ddt = double of doublet of triplets, tt = triplet of triplets, br s = broad singlet and br d = broad doublet.

BIOLOGICAL EXAMPLES OF THE INVENTION

TEST A

Fall Armyworm

Test units, each consisting of a H.I.S. (high impact styrene) tray with 16 cells were prepared. Wet filter paper and approximately 8 cm^2 of lima bean leaf was placed into twelve of the cells. A 0.5-cm layer of wheat germ diet was placed into the four remaining cells. Fifteen to twenty third-instar larvae of fall armyworm (*Spodoptera frugiperda*) were placed

into a 230-mL (8-ounce) plastic cup. Solutions of each of the test compounds in 75:25 acetone-distilled water solvent were sprayed into the tray and cup. Spraying was accomplished by passing the tray and cup on a conveyer belt directly beneath a flat fan hydraulic nozzle which discharged the spray at a rate of 0.138 kilograms of active ingredient per hectare (about 0.13 pounds per acre) at 207 kPa (30 p.s.i.). The insects were transferred from the 230-mL cup to the H.I.S. tray (one insect per cell). The trays were covered and held at 27°C and 50% relative humidity for 48 hours, after which time readings were taken on the twelve cells with lima bean leaves. The four remaining cells were read at 6-8 days for delayed toxicity. Of the compounds tested, the following gave control efficacy levels of 80% or greater: 1, 5, 10, 15, 18, 26, 71, 72 and 92.

TEST B

Tobacco Budworm

The test procedure of TEST A was repeated for determining efficacy against third-instar larvae of the tobacco budworm (*Heliothis virescens*) except that three 230-mL (8-ounce) plastic cups with wheat germ diet were used in place of the H.I.S. tray, with each cup pre-infested with five third-instar larvae. Of the compounds tested, the following gave mortality levels of 80% or higher: 1, 10, 18, 46, 71 and 92.

TEST C

Southern Corn Rootworm

Test units, each consisting of a 230-mL (8-ounce) plastic cup containing a 6.5-cm^2 (1-square-inch) plug of a wheatgerm diet, were prepared. The test units were sprayed as described in TEST A with individual solutions of the test compounds. After the spray on the cups had dried, five second-instar larvae of the southern corn rootworm (*Diabrotica undecimpunctata howardi*) were placed into each cup. The cups were held at 27°C and 50% relative humidity for 48 hours, after which time mortality readings were taken. The same units were read again at 6-8 days for delayed toxicity. Of the compounds tested, the following gave control efficacy levels of 80% or greater: 1, 10, 15, 18, 19, 20, 21, 24, 26, 27, 31, 33, 37, 39, 40, 41, 42, 46, 47, 48, 51, 53, 58, 63, 69, 71, 72, 73, 75, 77 and 92.

TEST D

Two-Spotted Spider Mite

Pieces of kidney bean leaves, each approximately 6.5 cm^2 (1 square inch) in area, that had been infested on the undersides with 25 to 30 adult mites (*Tetranychus urticae*), were sprayed with their undersides facing up on a hydraulic sprayer with a solution of the test compound in 75:25 acetone-distilled water solvent. Spraying was accomplished by passing the leaves, on a conveyor belt, directly beneath a flat fan hydraulic nozzle which discharged the spray at a rate of 0.138 kilograms of active ingredient per hectare (about 0.13 pounds per acre) at 207 kPa (30 p.s.i.). The leaf squares were then placed underside-up on a square of wet cotton in a petri dish and the perimeter of the leaf square was tamped down onto the

cotton with forceps so that the mites could not escape onto the untreated leaf surface. The test units were held at 27°C and 50% relative humidity for 48 hours, after which time mortality readings were taken. Of the compounds tested, the following gave mortality levels of 80% or higher: 1, 5, 6, 10, 15, 18, 19, 21, 22, 23, 24, 25, 26, 27, 33, 37, 39, 40, 41, 42, 44, 45, 46, 47, 48, 50, 51, 52, 53, 57, 58, 60, 61, 62, 63, 68, 69, 70, 71, 72, 73, 74, 77 and 92.

TEST E

Corn Planthopper Test

Test Unit: The test unit consists of a plastic cup containing 126 +/- 4 grams of sterilized, non-fertilized sassafras (sandy loam) soil. One pre-germinated Pioneer variety 3394 corn seed is placed in a 1 inch depression in the soil and covered. The test unit is watered with 15 mL of distilled water and placed in a closed Plexiglas box inside a greenhouse operating at 24 degrees centigrade and 36% relative humidity for 4 days at which time it is ready for test. A snug fitting test unit lid with a small opening at the top is placed on all test units prior to test.

Compound Application: Test compounds are formulated at 200 ppm in 20% acetone: 80% water containing 500 ppm Ortho X-77 surfactant. Compounds are applied through the opening in the test unit lid with an atomizer sprayer fitted with a Model 17690-1/8JJAU nozzle and a spray set-up consisting of a J2850 Fluid Cap and J70 Air Cap (Spray Systems, Inc.). The sprayer was operated at 12-13 psi. For each compound, 2 test units are sprayed with a total of 2 mL each of test solution. After spraying, test units are placed in a ventilated enclosure for 10-15 minutes to dry.

Insect Infesting/Evaluation: After drying, a thin layer of white quartz sand is poured onto the soil of each test unit to aid in the evaluation of live and dead insects at the conclusion of the test. Each unit is infested with a minimum of 15 nymphs of the corn planthopper (*Peregrinus maidis*) which are approximately 21 days old. Infested test units are held in a growth chamber operating at 22 degrees centigrade and 50% relative humidity with a 16:8 light:dark photoperiod. Insect mortality is evaluated at 6 days post-infestation. Moribund insects are counted as dead. Of the compounds tested, the following gave mortality of 80% or greater: 1, 5, 10, 15, 18, 19, 21, 22, 24, 26, 37, 39, 46, 47, 50, 58, 60, 70, 71, 72 and 92.

TEST F

Green Peach Aphid Test

A turnip plant infested with Green Peach Aphid (*Myzus persicae*) serves as a test unit for this bioassay. All plants have between 15 and 25 aphids (all life stages) on them. The turnip plants are sprayed with a single rate of 0.25 lb. AI/A of each compound at 30 p.s.i. on a moving belt sprayer. All test compounds are formulated using 75/25 acetone/distilled water solvent. All treatments are replicated once. A soil drench of the compound is also applied to each test unit. The drench consists of 2 mL the compound at 0.25 lb. AI/A.

Mortality is assessed at 7 days post compound application by counting live and dead insects under a microscope. Of the compounds tested, the following gave mortality of 80 % or greater: 1, 10, 18, 26, 70 and 71.

Test compounds in Tests G-K were first dissolved in acetone in an amount equal to 3% of the final volume and then suspended at a concentration of 200 ppm in purified water containing 250 ppm of the surfactant Trem® 014 (polyhydric alcohol esters). The resulting test suspensions were then used in Tests G-K. Spraying these 200 ppm test suspensions to the point of run-off on the test plants is the equivalent of a rate of 500 g/ha.

TEST G

The test suspension was sprayed to the point of run-off on wheat seedlings. The following day the seedlings were inoculated with a spore dust of *Erysiphe graminis* f. sp. tritici, (the causal agent of wheat powdery mildew) and incubated in a growth chamber at 20°C for 7 days, after which disease ratings were made.

TEST H

The test suspension was sprayed to the point of run-off on wheat seedlings. The following day the seedlings were inoculated with a spore suspension of *Puccinia recondita* (the causal agent of wheat leaf rust) and incubated in a saturated atmosphere at 20°C for 24 h, and then moved to a growth chamber at 20°C for 6 days, after which disease ratings were made.

TEST I

The test suspension was sprayed to the point of run-off on rice seedlings. The following day the seedlings were inoculated with a spore suspension of *Pyricularia oryzae* (the causal agent of rice blast) and incubated in a saturated atmosphere at 27°C for 24 h, and then moved to a growth chamber at 30°C for 5 days, after which disease ratings were made.

TEST J

The test suspension was sprayed to the point of run-off on tomato seedlings. The following day the seedlings were inoculated with a spore suspension of *Phytophthora infestans* (the causal agent of potato and tomato late blight) and incubated in a saturated atmosphere at 20°C for 24 h, and then moved to a growth chamber at 20°C for 5 days, after which disease ratings were made.

TEST K

The test suspension was sprayed to the point of run-off on cucumber seedlings. The following day the seedlings were inoculated with a spore suspension of *Botrytis cinerea* (the causal agent of gray mold on many crops) and incubated in a saturated atmosphere at 20°C for 48 h, and moved to a growth chamber at 20°C for 5 days, after which disease ratings were made.

Results for Tests G-K are given in Table A. In the table, a rating of 100 indicates 100% disease control and a rating of 0 indicates no disease control (relative to the controls).

A dash (–) indicates no test results. ND indicates disease control not determined due to phytotoxicity.

TABLE A

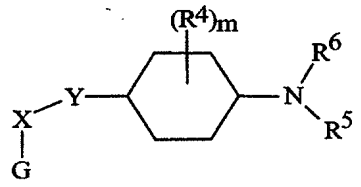
Cmpd No.	Test G	Test H	Test I	Test J	Test K
1	99	100	86	99	–
2	32	86	0	0	–
3	0	0	0	0	–
4	0	0	0	5	–
5	0	0	0	21	0
6	0	0	0	0	0
7	0	0	0	63	0
8	0	0	0	85	0
9	0	25	0	76	8
10	100	100	86	ND	43
15	100	100	86	–	0
18	99	100	0	75	0
19	0	99	0	ND	69
20	39	0	0	61	19
21	95	100	0	–	0
22	86	0	0	47	65
23	61	0	0	26	0
24	0	0	0	0	0
25	97	99	0	86	0
26	99	100	0	93	0
27	98	99	0	47	0
31	77	85	0	62	8
32	0	0	0	23	8
33	62	97	0	86	8
34	0	25	0	23	47
37	99	100	53	100	47
38	98	0	0	21	0
39	20	100	0	100	48
40	80	97	0	84	0
41	80	94	0	92	0
42	88	86	0	74	94
43	93	0	0	59	83
44	80	86	0	99	0
45	46	68	0	92	0
46	97	100	0	95	0
47	99	100	53	ND	0

Cmpd No.	Test G	Test H	Test I	Test J	Test K
48	97	97	0	99	0
49	96	0	0	74	0
50	86	—	0	ND	0
51	97	99	53	0	83
52	73	85	0	45	0
53	90	0	0	23	94
54	87	28	0	0	0
55	0	0	0	0	96
56	55	27	0	23	0
57	90	97	0	0	0
58	99	99	0	0	0
59	88	0	0	16	0
60	95	0	0	ND	0
61	0	0	0	0	0
62	90	85	0	0	94
63	0	0	0	26	65
64	0	0	0	0	0
65	0	0	0	0	88
68	95	99	86	ND	8
69	86	93	53	0	8
70	61	0	0	26	39
71	55	100	53	97	0
72	94	99	0	ND	0
73	0	66	0	ND	8
74	63	68	0	21	0
75	62	85	0	86	8
76	0	0	0	45	47
77	0	97	0	100	8
78	0	0	0	45	8
91	0	85	0	ND	69
92	95	100	74	26	0
93	0	0	0	60	0
94	0	0	0	85	0

CLAIMS

What is claimed is:

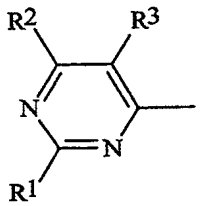
1. A compound selected from Formula I, and agriculturally suitable salts thereof,



I

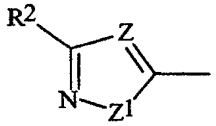
wherein:

G is selected from the group consisting of



G-1

and



G-2

;

Y is a direct bond or C_1-C_4 alkylene optionally substituted with C_1-C_4 alkyl;

X is O, NR^7 or $S(O)_p$;

each Z is independently selected from N and CR^3;

each Z^1 is independently selected from O, S and NR^8;

each R^1 is independently selected from the group consisting of H, halogen, C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_3-C_6 cycloalkyl, C_3-C_6 halocycloalkyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy and $R^9S(O)_p$;

each R^2 is independently selected from the group consisting of H, CF_3, C_1 alkyl optionally substituted with one or two R^{10} substituents, C_2-C_4 alkyl, $R^{10}CH_2CH_2$-, $(R^{10})_2CHCH_2$-, $R^{10}CH_2CH(R^{10})$-, $CH_3C(R^{10})_2$-, C_3-C_4 haloalkyl, C_2-C_4 alkenyl, C_2-C_4 haloalkenyl, C_2-C_4 alkynyl, C_2-C_4 haloalkynyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, halogen, hydroxy, C_2-C_4 alkylcarbonyl, C_2-C_4 haloalkylcarbonyl, C_3-C_6 cycloalkyl, C_3-C_6 halocycloalkyl, cyano, nitro, thiocyanato, C_2-C_4 alkoxycarbonyl, C_2-C_4 haloalkoxycarbonyl, C_1-C_4 alkylamino, C_2-C_4 dialkylamino and $R^{11}S(O)_p$;

each R^3 is independently selected from the group consisting of H, C_1-C_4 alkyl optionally substituted with one or two R^{10}, CF_3, C_2-C_4 alkenyl, C_2-C_4 haloalkenyl, C_2-C_4 alkynyl, C_2-C_4 haloalkynyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, halogen, hydroxy, C_2-C_4 alkylcarbonyl, C_2-C_4 haloalkylcarbonyl, C_3-C_6 cycloalkyl, C_3-C_6 halocycloalkyl, cyano, nitro, thiocyanato,

C_2-C_4 alkoxycarbonyl, C_2-C_4 haloalkoxycarbonyl, C_1-C_4 alkylamino, C_2-C_4 dialkylamino and $R^{11}S(O)_p$; or

R^2 and R^3 with the carbon atoms to which they are attached are taken together to form a:

(1) 5- or 6-membered unsaturated carbocyclic ring optionally substituted with R^{12}; or

(2) 5- or 6-membered unsaturated heterocyclic ring optionally substituted with R^{12} containing at least one of the atoms selected from O, N and S in the ring; or

R^2 and R^3 with the carbon atoms to which they are attached are taken together to form a:

(1) 5-, 6- or 7-membered saturated carbocyclic ring optionally substituted with a C_1-C_4 alkyl group; or

(2) 5-, 6- or 7-membered saturated heterocyclic ring optionally substituted with a C_1-C_4 alkyl group containing one or two O and/or $S(O)_p$ atoms in the ring;

each R^4 is independently selected from the group consisting of C_1-C_4 alkyl and C_1-C_4 alkoxy;

R^5 is H, C_1-C_6 alkyl optionally substituted with R^{13}, C_1-C_6 haloalkyl, C_3-C_6 cycloalkyl, C_3-C_6 halocycloalkyl, C_3-C_6 alkenyl, C_3-C_6 haloalkenyl, C_3-C_6 alkynyl, C_3-C_6 haloalkynyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy, C_3-C_6 alkynyloxy, C_3-C_6 haloalkenyloxy, C_4-C_6 cycloalkylalkoxy, C_2-C_6-cyanoalkoxy, phenylmethoxy, C_2-C_6 alkylcarbonyl, C_3-C_6 cycloalkylcarbonyl, phenylmethoxycarbonyl, formyl, C_2-C_6 haloalkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 haloalkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, hydroxy, $R^{14}S(O)_p$, $(R^{15})(R^{16})P(O)$, phenyl or benzoyl each optionally substituted with one, two or three R^{17} substituents, naphthalenyl or a 5- or 6-membered unsaturated heterocyclic ring optionally substituted with one or two R^{17} substituents;

R^6 is G, H, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_2-C_6 alkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, $R^{14}S(O)_p$, $(R^{15})(R^{16})P(O)$, phenyl optionally substituted with one, two or three R^{17} substituents, naphthalenyl or a 5- or 6-membered unsaturated heterocyclic ring optionally substituted with one or two R^{17} substituents; or

R^5 and R^6 with the nitrogen atom to which they are attached are taken together to form a:

(1) 5- or 6-membered unsaturated heterocyclic ring optionally containing an additional heteroatom selected from N, O and S in the ring and optionally

containing one or two ring members C(=O), the ring optionally substituted with one or two R^{18} substituents;

(2) 5-, 6- or 7-membered saturated heterocyclic ring optionally containing an additional heteroatom selected from N, O and $S(O)_p$ in the ring and optionally containing one or two ring members C(=O), the ring optionally substituted with one or two R^{18} substituents; or

(3) 9-, 10- or 11-membered fused bicyclic ring system optionally containing an additional heteroatom selected from N, O and $S(O)_p$ in the ring and optionally containing one or two ring members C(=O), the ring optionally substituted with one or two R^{18} substituents;

R^7 is H, C_1-C_4 alkyl, C_2-C_4 alkenyl, C_2-C_4 alkynyl, C_2-C_4 alkylcarbonyl, C_2-C_4 alkoxycarbonyl, C_2-C_4 alkylaminocarbonyl or C_3-C_8 dialkylaminocarbonyl;

each R^8 is independently selected from the group H, C_1-C_4 alkyl and C_3-C_6 cycloalkyl;

each R^9 is independently selected from the group C_1-C_4 alkyl and C_1-C_4 haloalkyl;

each R^{10} is independently selected from the group consisting of halogen, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, C_2-C_6 alkylcarbonyl, C_2-C_6 alkoxycarbonyl, hydroxy, cyano, nitro, thiocyanato and $R^9S(O)_p$;

each R^{11} is independently selected from the group C_1-C_4 alkyl and C_1-C_4 haloalkyl;

each R^{12} is independently selected from the group consisting of halogen, cyano, nitro, hydroxy, C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, C_1-C_4 alkylthio, C_1-C_4 alkylsulfinyl and C_1-C_4 alkylsulfonyl;

each R^{13} is independently selected from the group consisting of halogen, hydroxy, cyano, nitro, C_3-C_6 cycloalkyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, phenylmethoxy, C_2-C_6 alkylcarbonyl, C_2-C_6 haloalkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 haloalkoxycarbonyl, C_1-C_4 alkylthio, C_1-C_4 alkylsulfinyl, C_1-C_4 alkylsulfonyl, C_1-C_4 haloalkylsulfonyl, aminocarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, $R^9S(O)_p$ and phenyl optionally substituted with one, two or three R^{17} substituents;

each R^{14} is independently selected from the group consisting of C_1-C_4 alkyl, C_1-C_4 haloalkyl and phenyl optionally substituted with one, two or three R^{17} substituents;

each R^{15} and each R^{16} are independently selected from the group consisting of C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_1-C_4 alkoxy and C_1-C_4 haloalkoxy;

each R^{17} is independently selected from the group consisting of halogen, cyano, nitro, hydroxy, C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, C_1-C_4 alkylthio, C_1-C_4 alkylsulfinyl and C_1-C_4 alkylsulfonyl;

each R^{18} is independently selected from the group consisting of halogen, cyano, nitro, hydroxy, C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy,

$R^{14}S(O)_p$, C_2-C_6 alkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl and phenyl, phenylmethyl or pyridinyl each optionally substituted with one, two or three R^{17} substituents;

m is 0, 1 or 2; and

each p is independently selected from 0, 1 and 2.

2. A compound of Claim 1 wherein

G is G-1;

Y is a direct bond;

X is NR^7;

R^1 is H or C_1-C_4 alkyl;

R^2 is C_1-C_4 alkyl, CF_3, C_3-C_6 cycloalkyl, $R^{10}CH_2CH_2$-, $(R^{10})_2CHCH_2$-, $R^{10}CH_2CH(R^{10})$-, $CH_3C(R^{10})_2$-, or C_1 alkyl optionally substituted with C_1-C_4 alkoxy;

R^3 is C_1-C_4 alkyl, CF_3, C_1 alkyl optionally substituted with C_1-C_4 alkoxy, C_2-C_4 alkenyl, C_2-C_4 alkynyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, halogen, hydroxy, cyano, nitro, thiocyanato or $R^{11}S(O)_p$; and

m is 0.

3. A compound of Claim 2 wherein

R^5 is H, C_1-C_6 alkyl optionally substituted with R^{13}, C_1-C_6 haloalkyl, C_3-C_6 cycloalkyl, C_3-C_6 alkenyl, C_3-C_6 haloalkenyl, C_3-C_6 alkynyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy, C_3-C_6 alkynyloxy, C_3-C_6 haloalkenyloxy, C_4-C_6 cycloalkylalkoxy, C_2-C_6-cyanoalkoxy, phenylmethoxy, C_2-C_6 alkylcarbonyl, C_3-C_6 cycloalkylcarbonyl, phenylmethoxycarbonyl, formyl, C_2-C_6 haloalkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 haloalkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, hydroxy, $R^{14}S(O)_p$, or $(R^{15})(R^{16})P(O)$;

R^6 is G, H, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_2-C_6 alkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, $R^{14}S(O)_p$, $(R^{15})(R^{16})P(O)$, phenyl optionally substituted with one, two or three R^{17} substituents, naphthalenyl or a 5- or 6-membered unsaturated heterocyclic ring optionally substituted with one or two R^{17} substituents; or

R^5 and R^6 with the nitrogen atom to which they are attached are taken together to form a 1-piperazinyl; 2,5-dioxo-1-pyrrolidinyl; 2,5-dihydro-2,5-dioxo-1*H*-pyrrol-1-yl; or 1,3-dihydro-1,3-dioxo-2*H*-isoindol-2-yl; ring each optionally substituted with R^{18}.

4. A compound of Claim 3 wherein

R^5 is H, C_1-C_6 alkyl optionally substituted with R^{13}, C_1-C_6 haloalkyl, C_3-C_6 cycloalkyl, C_3-C_6 alkenyl, C_3-C_6 haloalkenyl, C_3-C_6 alkynyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy, C_3-C_6 alkynyloxy, C_3-C_6 haloalkenyloxy, C_4-C_6 cycloalkylalkoxy, C_2-C_6-cyanoalkoxy, phenylmethoxy, C_2-C_6 alkylcarbonyl, C_3-C_6 cycloalkylcarbonyl, phenylmethoxycarbonyl, formyl, C_2-C_6 haloalkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 haloalkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, hydroxy, $R^{14}S(O)_p$, or $(R^{15})(R^{16})P(O)$;

R^6 is G, H, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_2-C_6 alkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, phenyl optionally substituted with one, two or three R^{17} substituents, or pyridinyl optionally substituted with one or two R^{17} substituents; or

R^5 and R^6 with the nitrogen atom to which they are attached are taken together to form a 1-piperazinyl; 2,5-dioxo-1-pyrrolidinyl; 2,5-dihydro-2,5-dioxo-1*H*-pyrrol-1-yl; or 1,3-dihydro-1,3-dioxo-2*H*-isoindol-2-yl; ring each optionally substituted with R^{18}.

5. A compound of Claim 3 wherein

R^5 is H, C_1-C_6 alkyl optionally substituted with R^{13}, C_1-C_6 haloalkyl, C_3-C_6 cycloalkyl, C_3-C_6 alkenyl, C_3-C_6 haloalkenyl, C_3-C_6 alkynyl, C_1-C_6 alkoxy, C_1-C_6 haloalkoxy, C_3-C_6 alkynyloxy, C_3-C_6 haloalkenyloxy, C_4-C_6 cycloalkylalkoxy, C_2-C_6-cyanoalkoxy, phenylmethoxy, C_2-C_6 alkylcarbonyl, C_3-C_6 cycloalkylcarbonyl, phenylmethoxycarbonyl, formyl, C_2-C_6 haloalkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 haloalkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, hydroxy, $R^{14}S(O)_p$, or $(R^{15})(R^{16})P(O)$;

R^6 is H, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_2-C_6 alkylcarbonyl, C_2-C_6 alkoxycarbonyl, C_2-C_6 alkylaminocarbonyl, C_3-C_8 dialkylaminocarbonyl, phenyl optionally substituted with one, two or three R^{17} substituents, or pyridinyl optionally substituted with one or two R^{17} substituents; or

R^5 and R^6 with the nitrogen atom to which they are attached are taken together to form a 1-piperazinyl; 2,5-dioxo-1-pyrrolidinyl; 2,5-dihydro-2,5-dioxo-1*H*-pyrrol-1-yl; or 1,3-dihydro-1,3-dioxo-2*H*-isoindol-2-yl; ring each optionally substituted with R^{18}.

6. A compound of Claim 1 wherein

G is G-2;

Y is a direct bond;
X is NR^7;
Z^1 is S;
R^2 is C_1-C_4 alkyl, C_1-C_4 haloalkoxy, C_3-C_6 cycloalkyl or C_1 alkyl optionally substituted with C_1-C_4 alkoxy;
R^3 is C_1-C_4 alkyl, CF_3, C_1 alkyl optionally substituted with C_1-C_4 alkoxy, C_2-C_4 alkenyl, C_2-C_4 alkynyl, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, halogen, hydroxy, cyano, nitro, thiocyanato or $R^{11}S(O)_p$; and
m is 0.

7. An arthropodicidal composition comprising an arthropodicidally effective amount of a compound of Claim 1 and at least one of a surfactant, a solid diluent or a liquid diluent.

8. A method for controlling arthropods comprising contacting the arthropods or their environment with an arthropodicidally effective amount of a compound of Claim 1.

9. A fungicidal composition comprising a fungicidally effective amount of a compound of Claim 1 and at least one of a surfactant, a solid diluent or a liquid diluent.

10. A method for controlling plant diseases caused by fungal plant pathogens comprising applying to the plant or portion thereof, or to the plant seed or seedling, a fungicidally effective amount of a compound of Claim 1.

INTERNATIONAL SEARCH REPORT

Inte. .ional Application No
PCT/US 98/26013

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 C07D239/42 C07D403/12 C07D285/08 C07D401/12 C07D417/12
C07D413/12 C07D401/14 A01N43/54 A01N43/82

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 C07D A01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 96 06086 A (UBE INDUSTRIES, LTD.) 29 February 1996 cited in the application see claims 1-12	1-10
Y	PATENT ABSTRACTS OF JAPAN vol. 018, no. 639, 6 December 1994 & JP 06 247939 A (UBE INDUSTRIES, LTD.), 6 September 1994 see abstract	1-10
Y	PATENT ABSTRACTS OF JAPAN vol. 008, no. 095, 29 September 1995 & JP 07 138237 A (UBE INDUSTRIES, LTD.), 30 May 1995 see abstract	1-10

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
13 April 1999	23/04/1999

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Herz, C

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Inter ..onal Application No
PCT/US 98/26013

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	DE 22 56 289 A (WACKER-CHEMIE GMBH) 6 June 1974 see claims 1-3,5; table 4	1-10
A	GB 1 182 584 A (ICI LTD.) 25 February 1970 see claims 1-28; table IV	1-10
A	WO 94 20490 A (CIBA-GEIGY AG) 15 September 1994 see page 132 - page 137; claims 1-43	1-10
A	WO 97 16452 A (NOVARTIS AG) 9 May 1997 see claim 1; example 38	1-6

INTERNATIONAL SEARCH REPORT

Information on patent family members

Inter ..ional Application No
PCT/US 98/26013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9606086 A	29-02-1996	JP 8113564 A	07-05-1996
DE 2256289 A	06-06-1974	BE 807384 A	16-05-1974
		FR 2207134 A	14-06-1974
		JP 49081539 A	06-08-1974
		NL 7315687 A	20-05-1974
GB 1182584 A	25-02-1970	AT 276854 B	10-12-1969
		AT 279968 B	25-03-1970
		BE 696470 A	02-10-1967
		CH 497836 A	31-10-1970
		CS 165324 B	22-12-1975
		DE 1795726 A	31-07-1975
		DE 1795772 A	04-09-1975
		DE 1795833 A	11-03-1976
		DE 1795834 A	24-06-1976
		DE 1795835 A	24-06-1976
		DE 1695270 A	20-04-1972
		DK 126593 B	30-07-1973
		ES 338694 A	01-07-1968
		FR 1518112 A	28-06-1968
		NL 6704456 A,B	02-10-1967
		OA 2376 A	05-05-1970
		PH 11586 A	31-03-1978
		SE 356874 B	12-06-1973
		SE 405117 B	20-11-1978
		US 3980781 A	14-09-1976
		US 4000138 A	28-12-1976
WO 9420490 A	15-09-1994	AU 6141294 A	26-09-1994
		EP 0687262 A	20-12-1995
		JP 8507500 T	13-08-1996
		ZA 9401411 A	02-09-1994
WO 9716452 A	09-05-1997	AU 7296896 A	22-05-1997
		CA 2234609 A	09-05-1997
		CN 1202896 A	23-12-1998
		EP 0874846 A	04-11-1998